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ORIGINAL ARTICLES.

TOBACCO AMBLYOPIA.

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BY LEARTUS CONNOR, A.M., M.D.,

OPHTHALMIC AND AURAL SURGEON AT HARPER HOSPITAL AND CHILDREN'S HOSPITAL, AT DETROIT, MICH.

Mackenzie, in his treatise on ophthalmology, first directed especial attention to the fact that, in some persons, tobacco exerted a toxic influence upon the optic nerve.

This view was fully confirmed by the observations of Hart and Wordsworth, published a few years later. Hutchinson followed with several series of cases published in succeeding volumes of the Ophthalmic Hospital Reports. Each succeeding series being studied in the light of the preceding ones, threw an increasing flood of light upon the varying phases of this interesting affection. Krenchell, in 1870, gave us an excellent treatise upon this subject, based upon the careful study of 183 cases observed in Hanson's Copenhagen clinic.

Forster and Leber, in 1868–69, published their method of correcting slight defects of vision by means of the color sense. Bjerrum discovered the value of using slightly different shades of the same color in detecting the slighter degrees of central scotoma. Mr. Nettleship has recorded much original research in the study of this disease; especially are we indebted for his accurate representation of the field of vision with reference to the color sense of its several portions. Numerous other observers in America and Europe have rendered varying assistance in the investigation of tobacco amblyopia. Yet, in spite of all that has been done, ophthalmologists are divided not only upon details, but upon the very existence of this disease. There is scarcely a question upon the opposing sides of which do not stand equally able thinkers and students.

It is important that at the earliest practicable moment a substantial agreement be reached. This can only be done by adding to existing knowledge careful observations as occasion shall offer, and frankly discussing the same. In the hope that a discussion upon some features of tobacco amblyopia, by the members of this Section, may aid in advancing our knowledge, I venture to briefly report some of my own observations, to give a study of several hundreds of cases reported by others, and to present some propositions based thereon for convenience of discussion.

First, is there a distinct affection to which the name of tobacco amblyopia may be fitly applied? Bearing upon the answer to this question I report the two following cases of tobacco amblyopia in teetotalers:

Case 1.—Mr. T. S., æt. 56 years, an Englishman by birth and a florist by occupation, came to me March 19, 1889, complaining of increasing disability to see. He had noticed this for about three months, but for the past month he had been utterly unable to read a newspaper or to see the worms upon rose bushes in his hothouses. The color of the red roses had diminished in intensity till it was a dirty color. To a very annoying degree he mixed up colors in decoration with plants. Yet formerly he had been justly celebrated for his skill and accurate taste. He had always been an indefatigable worker—in the busy season working frequently till near morning and at other seasons reading till midnight or past. His temperament was of the nervo-sanguine variety. Alcohol he had never taken except as a medicine, but for more than forty years he had been a constant smoker. His favorite method was a pipe which was kept constantly filled with the best tobacco. The more he was bothered, the more vigorously did he smoke.

On examination I found the vision of his right eye $\frac{20}{100}$, not improved by any glass. Jaeger he could not read at all. The pupil was small but moveable. Ophthalmoscopic examination showed that the central retinal arteries were very small, otherwise the fundus was normal.

In his left eye the vision was 18-200ths, but in other respects like the right. Before both eyes was a horizontal oval scotoma in which red and green could not be clearly recognized. All small objects placed in this field were indistinct. The surrounding portions of the fields of vision were normal. The tension of the eyes was normal, and in all respects other than those mentioned they were apparently sound.

On special inquiry I found that just previous to

the beginning of the failure of his sight, he had been greatly depressed by family affairs. For some weeks he scarcely slept or ate, but he smoked with greater vigor than formerly.

He was informed that his loss of sight was due to his abuse of tobacco, and that its recovery depended upon his entire abstinence from it. After some demurring he consented to reduce his allowance to four pipefuls a day. After a short time even these were dropped, and from that time till the present he has not used tobacco. To determine whether the optic nerve fibres still retained their vitality I gave him a few drops of nitrite of amyl, as suggested by Powers. As soon as the neck and face became flushed, his vision increased to $\frac{20}{50}$, but it speedily returned to its former standard. This showed that the loss of vision was probably due to a deficient blood supply to the central portion of the optic nerves. To promote the circulation of the retina, and to sustain the nervous system against the depression incident to the stoppage of the tobacco, I gave him full doses of strychnia, administering it both by mouth and hypodermatically. My aim was to get him under its full influence as speedily as possible and to keep him there. On March 30 his vision was R. E. 20-50ths, L. E 20-200ths.

April 9 vision was 20-40ths R. E.; 20-100ths L. E.

On May 5 vision was R. E. 20-30ths, L. E. 20-40ths. He was now able to read Jaeger No. 1 at 12 inches with the same glasses that he used before his attack.

June 16 vision was 20-20ths in each eye, Jaeger No. 1, and with the greatest ease. Says that he can again read till midnight as formerly, can recognize all colors, and all objects in every portion of the field of vision, as well as he ever could. There is no trace of the central scotoma for any color or any object. The retinal arteries have become normal in size.

Case 2 was a clergyman, R. T., æt. 43 years. He came to me April 4, 1889, on account of loss of sight. He said that his sight had been gradually diminishing for three months, but that for five weeks he had been unable to read the coarsest print. He suffered no pain or discomfort other than approaching blindness. He was a large, well developed man of nervo-lymphatic temperament —had been a hard worker in his profession, and at several times had shown symptoms of cerebral exhaustion. The vision of his right eye was 4-200ths, with — Do. 50 C. ax. 180° it became 20-200ths. The vision of his left eye was 20-200ths, with — Do. 50 C. ax. 180° it became 20-70ths. With these glasses he could read with difficulty Jaeger No. 2.

His fields of vision were normal at their outer borders, but in the centres were oval scotomata especially marked for red, though all objects were dulled.

Bringing him moderately under the influence of the nitrite of amyl his vision was temporarily increased to 20-70ths and 20-50ths for right and left eyes respectively.

An ophthalmoscopic examination was negative except that it showed a diminution of the calibre of the central retinal arteries. The discs seemed paler than usual.

He said that he had never used liquor except as it has been prescribed by a physician. But for two years he had been a hard smoker. In addition to smoking himself he stated that he had spent very many evenings with groups of brother clergymen who all smoked, hence the air that he breathed at these times was fully saturated with the fumes of tobacco. When his sight began to fail, he smoked more constantly in order to increase his comfort while listening to the reading of members of his family. He had been worried greatly for some time anterior to his noticing a failure of vision. His appetite had been poor, so that a general depression unfitted him to endure the tobacco.

He was told that his disability was due mainly to tobacco, and that the restoration of his sight depended mainly upon his dropping its use. In addition he was placed under the influence of strychnia. After the full effects were obtained, the dose was diminished one-half and continued. He was directed to wear the glasses correcting his astigmatism constantly. Improvement was immediate and rapid, so that by April 23 his vision was 20-30ths with each eye and he could read Jaeger No. 1 at 14 inches. The scotomata had entirely disappeared. His general condition, he said, was better than since he began the use of tobacco.

These cases have the following common features:

1. The patients were great smokers and total abstainers.

2. They suffered from a great and comparatively rapid loss of sight not remedied by glasses and not due to external changes.

3. The ophthalmoscopic changes were negative aside from a diminution in the size of the central retinal arteries.

4. There was a central scotoma for colors, the colors being readily recognized throughout the rest of the field of vision. This scotoma was not seen by the patient as a dark spot, and in this regard differs from the scotoma due to disease of the outer layers of the retina.

5. In each case there was a distinct history of mental worry and impoverished nutrition from loss of appetite, etc., preceding the inception of the first symptom of failing sight.

6. The fields of vision aside from the scotomata were normal.

7. The stopping of the tobacco was followed by a more or less rapid recovery of distinct vision throughout the entire fields of vision.

From various sources I have collected twenty-

seven cases in each of which tobacco was used to excess, but no alcohol, and each of which presented substantially the same symptoms as those already reported. Briefly I will give an abstract of some of these as affording evidence in support of our argument.

Mr. W. E. Cant (Ophthalmic Hospital Reports, Vol. ii, p. 71,) reports thus: John C., aet. 40, was seen August, 1885, stating that his left eye began to fail six weeks previous, and the right more recently. Before this he had good sight. For ten years he had been a teetotaler, but he smoked regularly two ounces of twist tobacco a week. There was no history of syphilis, and the urine was free from both albumen and sugar.

Vision right 6-18ths and Jaeger No. 6, not improved by glasses, pupil normal. There was central scotoma for red. The optic disc was rather misty and a single linear hæmorrhage of moderate size was seen near the disc, passing downward and outward. Left vision, 6-60ths and Jaeger No. 16, not improved by glasses. Large central scotoma for red existed on the right. Optic disc was rather misty, but paler on the temporal side than that of the right eye. He was directed to stop smoking and take strychnia.

On November 21, vision in right eye was 6-9 and Jaeger No. 1, and in left 6-12 and Jaeger No. 6. The retinal hæmorrhage in the right had disappeared, but the discs were unchanged. He had ceased to smoke.

Dr. Farnsworth (*Am. Med. Times*, Oct., 1862) reports a case of impaired vision which, in spite of treatment, grew worse till it was discovered that he smoked a pipe almost constantly, and the coarsest kind of tobacco. The abandonment of the tobacco was followed by gradual recovery.

Mr. George Berry (Ophthalmic Hospital Reports, Vol. x, p. 46,) says that he has met two typical cases of tobacco amblyopia in non-drinkers. One was an old man aged 70, who had been a teetotaler for forty years. The other was a boy aged 19.

Mr. Hill Griffiths (British Ophthalmological Society Reports, Vol. vii, p. 83, etc.,) reports five cases of tobacco amblyopia in total abstainers.

Dr. Charles Shears (*British Medical Journal*, June 21, 1884,) reports two cases of tobacco amblyopia in teetotalers, and Mr. Stanford one case.

Dr. G. Hartridge (*British Medical Journal*, Jan. 20, 1886,) reports one case of tobacco amblyopia in a teetotaler.

Dr. Alt (*American Journal of Ophthalmology*,) reports seven cases of uncomplicated central amblyopia.

Dr. J. J. Chisolm reports a case of tobacco amblyopia in a refined lady who had learned to smoke in order to keep her husband company.

Bendell reports seven cases of uncomplicated tobacco amblyopia.

Schwenitz reports a case of tobacco amblyopia in a young woman who simply worked in a tobacco factory.

In this list we have twenty-nine cases of central amblyopia occurring in non-users of alcohol. Many of the cases completely recovered on the diminution or entire stoppage of the use of the tobacco.

I have never met with but one case of amblyopia in a drinker of alcohol who did not use tobacco.

In this case the amblyopia was not central, nor was it regular in the two eyes. From the literature at my disposal I have been unable to find a single case of central amblyopia in a non-user of tobacco and yet a drinker of alcohol. Perhaps such cases have been observed, but I could not find them fully and accurately recorded.

Hence, estimating the cases of central amblyopia as induced by the abuse of alcohol alone, or by the abuse of tobacco alone, it would seem that tobacco induced all and alcohol none.

But the majority of cases of central amblyopia occur among those who use both alcohol and tobacco to excess. Of these I have been able to collect the records of some 700 cases, made with more or less fulness. It is held by many ophthalmologists that the central amblyopia is induced by the combined action of these two drugs. Yet, as we have already seen, tobacco alone will, and alcohol alone has not been shown to, induce the symptoms under conditions described. Farther, in these mixed cases recovery from the amblyopia has followed abstinence from tobacco while the intemperate use of alcohol has been continued. I have records of some twenty-five of these cases, all occurring in my own private practice. As the general nature of their histories is so similar to that of the two cases of tobacco amblyopia already detailed, I omit full histories and give the following:

Mr. Marlow (Ophthalmic Hospital Reports, Vol. ii, p. 71,) reports thus: D. Cromartie, aged 54, clerk, a tall, robust, florid Scotchman, was seen May 17, 1884. His sight had failed rapidly in both eyes just a fortnight before. On getting up one morning he found that he could not see to brush his hair and that he could not read. He said that people's faces looked pale, that he saw better in a dull light, and that he confused copper with silver.

Visual acuteness was the same in each eye, 20-200 and 20 J. barely with plus 3 D. There was a well-marked central scotoma for red and green, densest outside the fixation point.

The optic discs were much too red, margins hazy and striated; to the inner side of the left disc, lying just below an artery of considerable size, was a well marked linear hæmorrhage in either fundus.

He had smoked since he was a boy; for forty

years he had smoked two ounces of Cavendish a week. He habitually drank a good deal. The urine was free from sugar and albumen.

He was ordered to stop the use of tobacco, to wear neutral tint glasses, apply a series of blisters to the temples, and take nux vomica, with an occasional purge.

On June 7 his vision had improved to 20-70, and with plus 3 D. he read 2 J. fairly. The hæmorrhage in the left was still visible, but much faded; optic discs paler and less hazy; the right disc was clearer and paler than the left, and on its upper and outer part were some loops of very small dilated vessels. The left disc was paler than the right, and showed marked white thickening of the sheaths of its descending artery and vein.

On July 5, R. V. = 20-50, W. Do. 5 = 20-40, L. V. = 20-30, not improved by glasses. Ophthalmoscopic examination now showed the discs less alike; the right was very pale at its outer third; the patch of small dilated vessels was still present just above the upper edge of the pale part; the left disc was pale all over, unlike the right.

He had almost given up tobacco, but still smoked two cigarettes a day; he continued to drink as much as usual all the time. Just before he was attacked he took cold and for some days took snuff.

In Volume vii, British Ophthalmological Society's Transactions, we find a series of over 200 cases of amblyopia induced by alcohol or tobacco, or both. Five of these were teetotalers, but used tobacco largely and presented the usual phenomena of central amblyopia. Three did not use any tobacco, but drank alcohol largely. These suffered also from amblyopia, but not *central* amblyopia. The other cases used both tobacco and alcohol in varying degrees, and all presented the characteristic phenomena of central amblyopia. These data would seem to indicate that the tobacco rather than the alcohol was the determining cause of the central amblyopia.

Diabetics who smoke, occasionally exhibit all the characteristics of tobacco amblyopia. Is this due to the tobacco, the diabetes, or to a combination of the two causes? I have observed only one such case. The subject was a clergyman aged 45. The diabetes had existed for a couple of years, but his sight had only failed so that he noticed it for about three months. He was an enormous smoker, and an enormous eater of all kinds of food, though a total abstainer from alcohol. On general principles, I insisted on his giving up his tobacco entirely, and governing his appetite within the bounds of reason. This he did while under treatment, and his eyesight greatly improved, though he died some years afterward from diabetes.

From the considerable number of cases on record I select the following illustrations:

Mr. Nettleship (*Ophthalmic Review*, Vol. ii, p. 23, etc.,) reports four cases of central amblyopia without ophthalmoscopic changes, in patients suffering from diabetes.

1. A man aged 40, who had suffered from diabetes for several months. He smoked half an ounce of tobacco a day. Failure of sight had been noticed for one month. Vision in each eye, 20-100, letters J. 4. Under treatment for diabetes, health improved, but not vision. He would not stop smoking.

2. A man aged 38 had suffered from diabetes three or four years. He smoked half an ounce of tobacco daily. Failure of sight had been noticed for five months. Vision in each eye was 5-200, letters J. 14. He died in the country three months later.

3. A male aged 45 had been the subject of diabetes during twenty-one months. He had smoked during the past thirty years three-quarters of an ounce of tobacco daily. He had noticed a failure of sight for five weeks. Vision was 20-100, J. 16. On examination his urine was found to contain sugar.

Nine other cases are referred to of failure of sight with central scotoma in the subjects of diabetes, without ophthalmoscopic changes. Most of the patients were smokers, and some of them great smokers.

In Vol. iii of the same Transactions, Mr. Nettleship reports eleven more cases of central amblyopia occurring in diabetics who were also users of tobacco. The same volume contains seven other similar cases reported by different observers.

From these and other similar cases found recorded in current ophthalmological literature, I found that the central amblyopia occurring in diabetics who use tobacco, always affects both eyes, that the central scotoma in one eye equals in extent and form that in the other. The fields of vision cover a normal area; the scotomata show a diminished perception of green and red, or an entire absence of the power of perception. The failure of sight begins simultaneously in the two eyes. Mr. Nettleship says that no case is upon record of equal central amblyopia as occurring in a non-smoking diabetic. Mooren, Staffan and others have reported so many of these cases of central amblyopia in diabetics that it would seem to be not so uncommon. Doubtless as the attention of the profession is directed to it more generally, additional cases will be recognized.

But, in the light of our present data, it seems fair to conclude that in the amblyopia of diabetics the efficient causative agent is tobacco, the diabetes acting like bad or insufficient food, mental disturbance long continued, etc., etc.

Central amblyopia does occur in women, but much less frequently than in men. I have never

seen a case in women who only smoked. Twice I have observed it in women who drank as well as smoked to excess. Hutchinson, out of 108 cases of tobacco amblyopia, found but nine women. Dr. A. Hill Griffith (*British Medical Journal*, Dec. 13, 1886,) reports seven cases of tobacco amblyopia in women. It is believed by some observers that the slighter grades of this affection would be found more frequently in women were it looked for more generally. Dr. Griffith says that since the test of central visual field for color has been applied to all cases not fully explained by other methods, he has met a surprising number of such cases. The following cases give us the ground for believing that in women there is no peculiarity in the effects of tobacco upon their vision, and no presumption for the belief that they would escape the disease better than men did they use as much tobacco.

Dr. George A. Berry (*Ophthalmic Review*, Vol. iii, p. 103, etc.) reports three cases suffering from tobacco amblyopia.

Case first was a tramp, who had no regular meals, but made enough by her profession to keep her pipe going. The immediate cause of the tobacco poisoning was that she had been worse fed, and consequently more in the habit of smoking during a period of fasting.

Case second was a woman aged 63 who had smoked half an ounce of "twist" daily for forty years. Nine months before she applied for relief she had lost her husband. This had so distressed her that she could not sleep, and though she had not smoked more, she had been unable to obtain a diet so nourishing as previously and hence often smoked upon an empty stomach. At her husband's death she could read newspaper print, but when tested her vision had been reduced to $\frac{20}{200}$.

Case third was an old servant, aged 57, who was known to have smoked for many years, getting up early in the morning to enjoy her pipe undisturbed in the scullery. Her blindness had come on from two to three months previous to the time she was examined, when the vision with plus D. 1.50 S. was 20-100ths. Latterly she had suffered from sick headaches and an irritable condition of the stomach, and frequently took no solid food for days, smoking while the other servants were at their meals. The ophthalmoscopic appearances in all three cases were confined to slight palor of the temporal sides of the discs.

On the other hand it is said that because tobacco amblyopia occurs more frequently in men than in women, is not necessarily due to the fact that women smoke less than men, for, 1st, men are exposed to greater vicissitudes than women; 2d, they indulge more generally and intemperately in free living.

2. It is urged also that other morbid states may induce a similar state of central amblyopia, as exposure to excessively bright light, etc.

3. If tobacco will produce this state of the optic nerve, why is it that out of millions of smokers, and smokers to excess, only a few hundreds of cases of central amblyopia are observed?

4. Again, it is urged that sight does not always grow worse even if the use of the tobacco be continued.

5. It is also claimed that alcohol will produce this peculiar defect of sight, and that the alcohol is the effective agent in all the mixed cases.

But, *per contra*, it seems that we have good reasons for believing in the existence of a central amblyopia due entirely to tobacco; for, as we have seen:

1. It occurs more frequently in men than in women because men smoke more than women.

2. It occurs in those who use tobacco to the exclusion of alcohol and does not occur in those who use alcohol to the exclusion of tobacco.

3. It gradualy disappears when the use of the tobacco is stopped.

4. In cases in which both tobacco and alcohol are used in excess, the stoppage of the tobacco, the alcohol being continued, is followed by an improvement of the sight.

5. In diabetics it occurs only in those who are excessive in their use of tobacco, and either diminishes or disappears when the tobacco is stopped.

Granting the existence of a tobacco amblyopia, where is the seat of its lesion?

Two views in general merit attention. 1. Von Graefe held that there must be a central disturbance to explain the symptoms. In support of this view is urged: the symmetrical distribution and equal degrees of scotomata in both eyes; the absence generally of any pathological changes in the retina or optic nerve; the nature of the color blindness; the frequent toxic origin of the amblyopia; and its curative nature.

2. In opposition to this Leber believed that the central scotoma was caused by a partial neuritis or atrophy of the optic nerve or some anomaly in the blood supply to the layers of nerve fibres. Bearing upon the solution of this question is the observation of the effect of nitrite of amyl upon the sight of a case of central amblyopia by Mr. George H. Powers (*Med. News*, December 4, 1886). He says that in a case in which the vision was reduced to 20-200ths, within five minutes after administering amyl nitrite the vision rose to 20-40ths. This sudden improvement lasts but an hour or so, but it shows that the loss of sight is due to a lack of blood to the central portion of the optic nerve. It does not enable us to say whether this is localized to the optic nerve or whether it is the result of its action upon the large nerve centres. In two instances I have been able to confirm Dr. Powers' observation.

There are other facts that would seem to connect tobacco amblyopia with retro-bulbar neuritis. Thus, Drs. Nettleship and Edmonds (Transac-

tions of the British Ophthalmological Society, Vol. i, p. 124) report the following: A lean, spare man, æt. 50, was seen for failure of sight. All his life he had been a large smoker, and for two years he had suffered from diabetes. After correcting his presbyopia and hypermetropia his vision in each eye was 20-70ths J. 10. There was but slight pallor of the discs and little haze of the surrounding retina. The fields of vision were normal, but each had a central scotoma in which a bright red spot appeared a faint pink. This area was symmetrical in the two eyes. Though he continued to smoke his sight did not become worse previous to death.

Dr. Edmonds examined the optic nerves after death. To the naked eye there was no evidence of disease. There were no changes anterior to the lamina cribrosa. Posterior to the lamina cribrosa on one side of the nerve was found a tract exhibiting the following pathological changes: 1, atrophy of the optic nerve fibres; 2, increase of the nuclei; 3, thickening of the connective tissue trabeculæ and of the walls of the smaller blood-vessels. In the hindermost sections the affected tract was nearly in the centre of the nerve; farther forward about the entrance of the central artery it approached nearly or quite to the surface of the nerve, affecting a patch which on transverse section appeared wedge-shaped, and from the relation of this diseased part to the central artery at its entrance it was certain that the change was chiefly in the temporal half of the nerve. Again, J. Samelsohn (*Ophthalmic Review*, Vol. i, p. 310) gives a full account of a case of central amblyopia that he was able to study both before and after death. On first examination of the patient a diagnosis of alcoholic amblyopia was made, but later, as abstinence from both alcohol and tobacco resulted in no improvement of vision, the diagnosis of retro-bulbar neuritis was made. At first there was only a small relative scotoma for red and green concentric with the fixation point in each eye. Peripherally the fields were normal. Central acuity was reduced to 15-70ths and 15-200ths. The discs were normal. Two months later the scotoma in each eye had increased in size and the perception of blue was impaired also. The disc margins were all slightly hazy and there was severe pain in the head. Two years later the scotomata had increased in size and were absolute for white as well as for colors, the boundaries not being absolutely determinable. Nothing abnormal was discovered in the blind area of the retina. The patient died of valvular heart disease. Microscopic examination after death showed that posterior to their entrance into the optic foramen the nerves and sheaths were normal in all respects. Within the bony canal the sheaths and vessels belonging to it were normal, but the nerve itself was reduced in size and flattened from above downward. Transverse sections from this part of the nerve showed a peripheral ring of healthy nerve substance, and within this an area of hypertrophied connective tissue with great proliferation of nuclei and increase of blood-vessels, together with remnants of destroyed nerve fibres. On the distal side of the foramen the signs of interstitial inflammation gradually subsided and the affected nerve substance presented the signs of ordinary nerve atrophy, showing that the atrophic changes occurring lower down were secondary, and due to the broken continuity.

The damaged nerve fibres were those connected with the blind area of the retina, the region of the macula. By following them down from the optic foramen to the eye the normal course of the macula fibres was obtained.

Thus it appears that, in these cases, the pathological process underlying central amblyopia is an axial interstitial neuritis, originating at the optic foramen, and leading to cicatricial contraction, and secondary descending atrophy of the nerve fibres.

These pathological changes are identical with those found in the optic nerves of persons dying who before death had exhibited the evidences of tobacco amblyopia, by Drs. Lawford and Edmonds, Vol. ii, Trans. Brit. Oph. Society; by W. Uhthoff in Arch. Oph., Vols. xxxii and xxxiii. As all of these observations were made upon persons who had used both alcohol and tobacco to excess and who suffered from other diseases as well, it is impossible to affirm that these changes were wrought by the agency of tobacco. Dr. Wecker and others strongly urge that the pathology of tobacco amblyopia is a retro-bulbar neuritis. Others deny this identity and urge their denial by the following considerations:

1. The scotomata of tobacco amblyopia are invariably identical in size and form in the two eyes. It would seem unlikely that an inflammatory process in separate nerves should in the separate optic nerves pursue such a similar course as to cause such scotomata.

2. It is difficult to see how an inflammatory process in separate nerves should in all stages of the affection produce the same degree of amblyopia in all stages of the affection.

3. It is hard to see how an inflammation in the optic nerves could confine itself so definitely to the impairment of the functions of one set of fibres. This difficulty is increased when we recall the fact that these same fibres occupy different situations in the nerve at different levels between the papillæ and the optic foramen.

4. How is it that both corresponding nerve fibres and their functions are affected in an equal degree in the separate nerves?

5. It is not denied that a retrobulbar neuritis may exist in connection with tobacco amblyopia, but it is not accepted as proven that the two are identical pathological processes.

From the present state of our knowledge it would seem that tobacco amblyopia was essentially a functional disorder. Possibly this functional disorder may induce an organic change, but more observations are needed to establish this view. It seems certain that it induces its effects through the circulation of the optic nerves. Possibly the tobacco may induce the interstitial changes described, or these may be due to quite different causes. In all cases tobacco amblyopia must be regarded as an idiosyncrasy.

The prognosis of tobacco amblyopia is good provided the patient can be induced to stop or suitably diminish the use of tobacco. All the cases I have observed either entirely recovered or were greatly improved. This coincides with the reports of nearly all observers. Mr. Hutchinson (Ophthalmic Hospital Reports, Vol. viii, p. 459, etc.) gives the results of a study of sixty-four cases of tobacco amblyopia several years after they were first seen. He says a recovery or great improvement took place in forty-eight of the sixty-four cases. A complete cure took place in thirty-one cases. In four cases the disease remained stationary. In seven cases the sight became worse while under care. Five were quite blind when first seen, and continued so.

The cases that came under his care quite early got well completely and quickly. Those of long duration were slower in recovering. Of the forty-eight patients who improved, twenty-six ceased smoking entirely for a time, and thirteen others very much diminished their use of tobacco. Of those who left tobacco for a time, six are known to have returned to smoking more or less after recovery of their sight, and in none did the sight again fail. In some cases the quantity of tobacco had been increased before the sight had begun to fail, in others evidences of greater susceptibility to its influence had attracted the patient's attention. Another class had always been intolerant of tobacco. In several of the cases that did not improve there was either an increased quantity of tobacco employed, or disagreement, or habitual susceptibility. In not one of the cases in which the patient improved did he continue to use his full amount of tobacco. Of the eleven patients that did not improve or became worse, eight continued smoking their usual allowance throughout.

Those in the best of health furnish several of the best and quickest recoveries. Several of this class were either total abstainers from alcohol, or practically so.

What should be the treatment of tobacco amblyopia? Some observers claim that in the anæmic forms of this disease strychnia should be administered, and that in cases of congested optic disc the iodide of potassium should be given. Others affirm that the only treatment called for is simple abstinence from tobacco. Our own belief is that each case should be treated according to the indications found. In every case it is desirable that the optic nerve be supplied, at the earliest possible time, with an abundance of good blood. The indications for the use of strychnia and the iodide of potassium are well stated. But the diet and mode of life should be studied, and the condition of the entire body should be rendered normal by appropriate medicine or regulation of habits, etc.

Questions upon which more light is desired:

1. What influence has alcohol upon the causation of central amblyopia?

2. Is it necessary to entirely suspend the use of tobacco in order to effect a cure of tobacco amblyopia?

3. Does tobacco produce atrophy of the optic disc?

4. What relationship, if any, exists between tobacco amblyopia and retro-bulbar neuritis?

5. What relationship exists between diabetes and tobacco amblyopia?

We have endeavored to show that

1. Tobacco has an especial affinity for a central tract in the optic nerves, and may induce central amblyopia.

2. No other single agent has been shown to induce central amblyopia symmetrical in both eyes, in strictly non-users of tobacco.

3. Some special condition or conditions are required to precipitate an attack, as abuse of alcohol, diabetes, excessive venery, starvation, mental shock, or distress, etc.

4. Some individuals seem to have an especial tendency to optic nerve degeneration, and to these the use of tobacco is especially injurious.

5. Clinically central amblyopia is recognized by its sudden development, by the existence of central scotoma for color in both eyes without limitation of the fields of vision, by the absence of any defect of refraction or recognizable lesion to account for the sudden blindness, and by its occurrence only in tobacco smokers.

6. Pathologically, during at least its earlier stages, it consists of an anæmia of the central portions of the optic nerves. Possibly this may, after a longer or shorter time, induce organic disease, but this has not yet been shown in a case of pure tobacco amblyopia.

Its prognosis is good during the earlier stages at least, if properly managed.

7. Its treatment consists principally in withdrawing the tobacco. Other measures may be profitably employed that promote the local nutrition of the eye and the system in general.

103 Cass Street.

DR. KNAPP: The lesion underlying central scotoma, consequently also that of this symptom in toxic amblyopia, is, I think, retrobulbar neuritis. Nobody who has seen the microscopic specimens of Samelsohn and Schöler, will doubt

this. Ophthalmoscopically the cases of toxic amblyopia show three varieties according to the stages of the disease. In the first, mild stage, the optic disc looks fairly normal; in the third, last stage there is pronounced general atrophy of the optic disc; in the second stage there is partial atrophy which has a peculiar picture, namely: a triangular temporal atrophy, the white dotted area reaches from the centre to the periphery, the limbs of this triangular atrophy being more or less faded. This very same picture, since my attention was drawn to it by a paper of Sachs' (which will appear in the forthcoming number of the *Arch. of Ophthalmol.*), I have seen it repeatedly quite marked. The very same picture I saw some months ago in one, slightly divergent, eye of a young lady, and when, after dilatation of the pupil, I examined her with the ophthalmoscope, I found an evidently congenital coloboma of the yellow spot. This, I think, is a corroboration of the position of the macular fibres in the end of the optic nerve. These observations have exceedingly interested me, for they enable the ophthalmoscopist to recognize in the living the tissue changes in peripheric neuritis.

DR. CHISOLM, while agreeing with the statement, saw also cases of undoubted tobacco amblyopia where alcohol was not used. He lives in a tobacco growing region and where tobacco is too freely used. A most marked case was one which he had lately reported, that of a lady æt. 40 who had come to him from a distance for treatment. Her bearing and language indicated a person of culture. She said that, being aware that about her age glasses would be needed, she had applied to the optician for aid in vain. Her distant as well as near vision was befogged and she was no longer able to read with ordinary comfort. After a very careful examination ophthalmoscopically and physically he had determined in his own mind that he had to deal with a case of tobacco poisoning, but dared not make the accusation. He however stated that were she a man he could tell at once what was the matter, but in the case of a lady he was altogether at sea. She said at once, "Call me a man and tell me what is the matter." As frankly he said, "You smoke too much." She laughed heartily and said that she did smoke, explaining that she had acquired the habit through persuasion of her husband, who constantly used tobacco. He had also seen cases in ministers who smoked to excess but who abstained from all alcoholic beverages. He had seen one case in which the patient, when accused of tobacco poisoning, laid stress on the fact that he only smoked one-half a cigar a day. Even this small amount made him sick. His amblyopia disappeared when the habit was permanently given up. On previous occasions he had said that he had never seen a case of tobacco amblyopia from chewing alone. Recently he had had occasion to modify this statement, as he had within the past three months been consulted by two gentlemen who did not smoke, but who had long been in the habit of chewing tobacco all day long and only had their mouths empty when at meals and during sleep. These cases show that tobacco alone can produce amblyopia. All got well when tobacco was abandoned permanently.

DR. ADOLPH BLITZ, Indianapolis, Ind.: I remember a case of tobacco amblyopia which occurred in my practice some fifteen years ago. The patient was a woman about 35 years of age, who lived in the mountains of Tennessee, whose vision gradually failed for some weeks, but during the three days before I saw her, she became blind to such an extent that she could only distinguish between daylight and darkness. She could not see to walk and had to be led into my office. I made a thorough ophthalmoscopic examination of the eyes, but as I now remember, found no lesion, and was at a loss to account for the loss of vision. While I turned to speak to her husband and the physician who brought her case to me, I noticed that the woman took from her pocket a small tin box and a little stick, which latter she dipped into the tin box and then carried it to her mouth and chewed it. Alert to anything that I could learn about her habits, I asked her what she had there. She said, "Oh, only some snuff." This was something new to me, as I had never seen snuff thus used before, although I had heard of it. I knew then the cause of her blindness. To my question how much of the snuff she used during the day, she told me, but I do not now remember the quantity, though I remember it seemed to me large. I told her that she must stop the use of the snuff entirely if she wanted to regain her vision, explaining to her that the snuff was the entire cause of her trouble. She did as I told her, and under the use of strychnia and electricity vision returned in about a week, and in about six weeks was entirely restored.

DR. NOYES, of Detroit, said: Dr. Connor's interesting paper just read is one of great importance. Cases of tobacco amblyopia came under my observation early in my practice—but in most cases the victims were hard drinkers, so it was difficult to say to which excess to lay the blame of failure of vision. A typical case of this sort now occurs to me. A middle-aged man from Canada consulted me on account of great failure of vision which had been troubling him for a long time. He was unable to make out the largest letters of Snellen Zeit type. His appearance plainly showed him to be a whisky drinker. In answer to my questions he said he drank heavily and smoked a pipe all the time. His habits had so firm a hold upon him that his case appeared to me hopeless. No examination was made with the ophthalmoscope of his eyes. He was advised to leave off both drink and tobacco.

Two cases also of failure of vision occur to me from excessive use of tobacco. One was a clergyman who had been presented with a very fine meerschaum pipe which he had been smoking almost incessantly in order to color it. With failure of vision he was troubled also with palpitation of the heart with syncope, which greatly alarmed him. Upon following my advice to quit his smoking his vision returned. The other case was a tobacco manufacturer, also of middle age. He was a great smoker of cigars of the best quality, using as many as twenty or thirty daily. His failure of sight led him to consult me. I advised him to give up his cigars and all use of tobacco. His vision at once improved and became normal.

DR. MYLES STANDISH: Several years ago I reported in detail a case of tobacco and alcohol amblyopia which was followed, as the patient persisted in his habits, by an alcoholic multiple neuritis. At that time I suggested that in all probability the amblyopia was also a peripheral neuritis. Since that time it has been my fortune to see three more cases of amblyopia *ex abusu*, in which the excess was not subsequently moderated, and which about three months later was followed by an alcoholic peripheral multiple neuritis. In two of these cases there was present a very noticeable whitening of the greater portion of the temporal half of one nerve at least. At the time I reported the first case I looked up the literature of alcoholic multiple neuritis and found that in the report of a number of cases reported by Dr. —— in which the eyes were examined, the sight was found diminished, and the note was also made that in several cases the temporal halves of nerves were remarkably white. It is my opinion that cases of toxic amblyopia, whether due to tobacco, alcohol or lead, are undoubtedly a part of a peripheral multiple neuritis which, unless the toxic agent is stopped, may appear in other nerves.

DR. E. J. GARDINER reported a typical case of tobacco amblyopia occurring in a clergyman, a total abstainer from liquor. The characteristic pallor of the temporal half of the disc was noticed. The patient recovered after treatment by hypodermic injections of ⅓ gr. of strychnia every other day for four weeks.

DR. KEYSER said he believed that it was not always the amount of tobacco used that caused the defect, and that he would call attention to the case of a young man who called upon him in relation to failing vision, and on examination he could find nothing but suspicion of tobacco amblyopia. But upon questioning the patient said that he had been trying for a long time to smoke, but invariably nausea occurred on every attempt. He has tried weak and strong cigars with the same effect. He still persevered daily in the effort, thinking that was the only way to become a smoker. On desisting from any further attempt to use tobacco he recovered entirely. He did not drink any alcoholic liquor of any kind. This case shows that it is not the quantity of tobacco used that causes this disease, but as in this case, the tobacco may act as a peculiar irritant to the stomach—the brain subsequently becoming affected. In other words, there was in the case cited an idiosyncrasy against tobacco.

SOME THOUGHTS ON THE ETIOLOGY, PATHOLOGY AND THERAPEUTICS OF PHTHISIS PULMONALIS.

Delivered in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY W. L. SCHENCK, M.D.,
OF OSAGE CITY, KANSAS.

Every physician has measured swords with this Prince of Destroyers, and with all it has too often proved the victor. In every age it has been carefully studied by the best minds in the profession, yet only the nostrum vender fully comprehends its methods and cure.

Truth is many-sided. Diversity in unity in the world of matter and of spirit is the thought of God. The mind of man, or the medium through which it acts, impels different investigators to follow different lines. Their eager search and earnest faith in their own methods may narrow their vision, but all is evolved that lies in the direction of their search. The impartial collaborator unifies their results, and truth is revealed.

It is generally agreed that phthisis is the consequent of a constitutional cachexy, which may be hereditary or acquired—not the disease, but the organic elements which, under certain conditions, are prone to the development of tubercle—and that when the predisposition exists and the conditions are favorable, we have tuberculosis. All, however, do not agree upon its etiology and pathology. Until these are solved we cannot hope to find a rational treatment, preventive or curative. The predisposition or constitutional taint lies in the elements from which the tubercle arises. While there is some diversity of opinion as to the particular structure from which it springs, it is generally conceded that it originates in connective tissue. Fothergill says that "connective tissue is primitive tissue from which higher tissues are evolved.[1]" Whether its cells, like the embryonic cell, are capable of evolving physiologically higher types of cells is, perhaps, doubtful, but under degrading influences they are prone to differentiate lower types of pathological cells. From this tissue, normally abundant throughout the body, and formed wherever through inflammatory processes albuminous effusion occurs, springs nearly all the neoplasms.

[1] Handbook of Treatment, p. 192.

Tubercle is a neoplastic growth, and the tubercle cell is a pathological connective tissue cell, or possibly, as some distinguished pathologists assert, an infiltration of lymphoid cells in the aventitia of blood vessels, or small nodular masses of lymphoid cells around or within blood vessels or ducts.[2] But whether the tubercle arises from the connective tissue or from the lymphoid cell —the white blood corpuscles produced by the lymphatics—let us see, if we can, what constitutes the predisposition to its differentiation. Whenever connective tissue approaches an embryonic type, is rich in nuclei and young cells, an exhausted vitality, from whatever cause, leaves this immature plastic cell growth devitalized and prone to retrograde metamorphosis, and the new cells are, according to Virchow, "a pitiful production, from their very outset miserable." Like all the lower forms of life, they substitute rapidity of proliferation for perfection of development. Their rapid reproduction presses them one against another and they form a tubercle. The pressure strangulating the circulation at the centre, the central cells are devitalized and soon degenerate into a shrunken, cheesy mass, the cheesy transformation being often followed by purulence. While this is the common course, the result varies with the extent of degradation, and reaches its acme in the milliary tubercle, where, through their rapid proliferation, the cells are detached and carried through the lymphatic vessels to other locations. The more degraded the cell, the more dangerous the disease.

Where there is defective nutrition, or vital deterioration from any cause, in those who inherit or acquire a facile type of connective tissue cell, it is prone to differentiate the lower type of tubercle cell; but why this specific differentiation, is, perhaps, as inscrutable as the physiological differentiation from the embryonic cell of the various cells of the body. But the fact that embryonic cells do thus differentiate on and up to all the parts of the perfectly developed animal makes it less wonderful that some of their offspring, under given influences, should differentiate pathological cells, the pathological structures being only physiological diversions. While we may not know why special deteriorations occur, the influences that lead to them, their etiology is less obscure. We know that any cause sufficient to produce vital deterioration beyond a given point will cause the development of tubercle where the predisposition exists. The amount of deterioration is, however, by no means a fixed quantity, but varies with the predisposition. Yet the neoplastic growth never develops during robust health. Exhausting fevers, inflammatory processes, syphilis, excess of venery, pregnancy, lactation, corroding care, any cause that lowers vital action, especially when increased by unsanitary surroundings and climatic vicissitudes, tends to tubercle.

Catarrh, bronchitis and pneumonia have been considered causes of consumption, but it does not arise directly from inflammatory processes and it is doubtful whether any cause beyond innutrition and vital deterioration is necessary to its development. Without lowered vitality, general or local, there is no tuberculosis.

The contagiousness of phthisis is said to be *sub judice*. An epithelial cell may be transplanted, as in skin grafting, and on favorable soil, with favorable surroundings, will proliferate. So it is not impossible that a tubercle cell, that can be transplanted through the lymph or blood vessels may be transferred from lung to lung; but this we think is the extent of its contagiousness. Each individual cell possesses an individual life, and where we find a cell there must have been a progenitor. It is as impossible for a cell to construct itself out of non-cellular matter as it is for an alga or an animalcule, a mastodon or a man, to build itself out of formative material. We know no life *de novo*.

From the time of Hippocrates there have been believers in the contagiousness of phthisis, and a large number of cases have been collected that seem to confirm the doctrine, but compared with those that have escaped contagion where the closest human relations have existed, they are far too few to establish any law, and a humane profession will not ostracise the unfortunate consumptive and deprive him of the sympathy and assistance of friends without further proof. The proof is too like that of the patent medicine man who hunts up the exceptional cases that get well and omits the hosts that die. Its contagion is certainly unlike that of variola, cholera and yellow fever, which do not occur independent of contact, and which do occur, in the unprotected, on contact. The history of such hospitals as the Brompton, London, and the Brehmers, Görbensdorf, as well as the observation of the million, show its contagiousness or portagiousness exceptional if not *nil*. Since the promulgation of the germ theory of disease, the theory of contagion has received a fresh impulse, not from any proof of contract through contact, but because of the bacilli found in dead tubercle cells, it being assumed that the bacilli are a *contagium vivum*. Animals and vegetables, microscopic or otherwise, have their habitat and their significance. Every specific degeneration has its dead tissue and doubtless its specific microbe. In the cell death incident to the tubercle, the bacillus tuberculosis finds its proper nutriment, and it may be the ferment that changes the caseated cell into putrid, semi-purulent matter.

We have before us the results of many experiments, by distinguished scientists, with microbe cultures. With all due respect for those by

[2] H. F. Formad, paper before the Phil. Med. Soc., 1883.

whom they were made, they have never created a tubercle cell or tuberculosis. By taking animals strongly predisposed to tubercular degeneration, placing them in unnatural confinement and on unusual diet, and injecting microbe cultures, it is alleged they have demonstrated the contagium of phthisis. With such animals and such surroundings, we may safely predicate phthisis after the injection of any ferment, or from substances, as pulverized glass, that are not ferments, or without any injection. A specific ferment must produce a specific disease and nothing else, and a specific disease must be caused by a specific ferment, and by nothing else.

When the animals have been inoculated with the "culture" and permitted their accustomed liberty the experiments have failed, and they have failed with the unnatural surroundings in animals in whom there is no strong tendency to the disease.

The argument for germ causation is: "It seems to be established that the so-called bacillus tuberculosis is uniformly present in tuberculous products and as uniformly absent in other products, that it is generally present in the sputa of phthisical patients and never present in the sputa of non-phthisical patients, and that tuberculous disease in animals may be produced by inoculation with the organism after cultivation has been sufficiently continued to eliminate all else pertaining to the tuberculous product. On these data are based the conclusion that phthisis is an infectious disease—in other words, that it involves in its causation a specific agent capable of self multiplication; that it is a communicable disease, and that the agent of communication is the bacilli tuberculosis; that is, this agent is contagium. The supposition that the bacillus is secondary to the tuberculous affection is not tenable, in view of the fact that the affection is produced by this organism after it has passed through several generations of culture out of the body."[3]

Distinguished as is the authority from whom we quote, the bacillus is not universally present, and, as a rule, not present at the beginning of the disease, and it is not always absent in other products. It has not been proven that the introduction of this organism, either before or after culture, is uniformly followed by phthisis, or that the disease produced in the lower animals is identical with phthisis in man, as has been fully demonstrated by the experiments of Formad, Sternberg, Truesdale and others. To make this theory sustain itself, its advocates must not only explain away results and the absence of results, and similar results produced by pulverized glass, etc., but must go back to the theory of Lænnec, that it is a special growth, unlike any other tissue; or of Carswell, that it is a secretion *sui generis*, disproved by the rational teachings of Virchow and Niemeyer. Certainly there is abundant proof that, as a rule, the dead cells precede the microbe, and the dead cells can arise from no other source than the tubercle cell. Virchow has truly said: "No form of morbid growth arises which cannot in its elements be traced back to some model which has previously maintained an independent existence in the economy."

The pathology of Virchow has been demonstrated, and that of Lænnec and Caswell disproved. Dr. Formad thinks Koch has taken a consequent for a cause. He says: "Koch has discovered that tubercle tissue is infested with bacilli, and this is correct; but this tubercle tissue is not created on account of or caused by the bacilli. These organisms invade the tissue wholly because it is a culture medium favoring their development." Prior to the cell death bacilli are not found in tubercle more than in the lung tissue before its differentiation.

The advocates of the germ theory tell us "our bodies outside, and especially inside, are covered by or contain billions of bacteria. All these microbes may become injurious under certain conditions. . . . . With certain kinds of bacteria the animal cells carry on a constant 'fight for life,' while others, more deadly, destroy cellular elements at an early date, in spite of resistance;" and that "all the competent men the world over, who have searched and studied the subject experimentally, have come to an almost unanimous conclusion—and they form a colossal array of intellect—in support of the much praised and much abused germ theory."[4] Truth is not demonstrated and science not established by a "colossal array of intellect." Only a few years have elapsed since all the world believed "the Lord made the heaven and earth, the sea and all that in them is, in six days." In the formation of tubercle, "cellular elements" are not destroyed in their "fight for life" with the more deadly bacteria, "in spite of resistance," but are merely degraded to a lower type, and that regardless of the presence or absence of microbes. Nor is the theory as stated by Dr. Phillips in a paper read before the last International Congress any more tenable: "Phthisis is the consequent of the bacilli tuberculosis, whose fatal consequences are in all probability attributable to a power possessed by them in elaborating new products, which are afterwards absorbed." The premises granted, the probabilities may be as you like.

The investigations and conclusions of Pasteur and Kohn and Koch created great expectations in the treatment of disease, and especially phthisis, the opprobrium medicini, and many members of the profession made earnest search for specifics. They administered their agents with intent to destroy the pathogenic germ. In the treatment of

[3] Austin Flint, M.D., System of Medicine by Pepper, Vol. iii, p. 399.

[4] Paul Paguin, Kansas City Medical Record, July, 1888.

phthisis they loaded their syringes with germicides and emptied them in the cellular tissue, the circulation, the lung, the tubercle, and finally into the rectum, hoping, it would seem, to steal a march on the enemy by the postern gate. The last treatment, instituted by Bergeon, which "went up like a rocket and came down like a stick," illustrates how prone we are, in the solution of vexed questions, to jump at conclusions and adopt means wholly inadequate to the end, In the first volume of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for 1887 we find four articles and several editorials commending the "treatment," and one, by Dr. Lynch, of Baltimore, condemning it, and he was severely criticized by the learned and practical editor of THE JOURNAL, who said: "It was with some surprise that many members of the Association heard the Chairman of the Section on Practice of Medicine, in his address last week, utterly condemn the Bergeon treatment. . . . . The method seems deserving the most thorough and extended investigation."[5] The hopes entertained when the germ theory of disease was enunciated are amply illustrated in this treatment.

The ardent search for specific germicides has called forth this query from one of the greatest of living physicians, Dr. B. W. Richardson: "What have we done to be visited in the heavens above, in the earth beneath, and in the waters under the earth, with this *pestis bacilorum*, which is now regnant?"

If germs created tubercle and we could administer germicides of sufficient strength to destroy them without first destroying the patient, would not the tubercle remain and the question be *cui bono?* An account of the remedial measures employed for the cure of phthisis would fill volumes. Since Koch's discovery of the tubercle bacillus they have generally been leveled at the germ, and even in the recent treatment of phthisis by the inhalation of hot air, which promises well, many seek its *rationale* in the destruction or hindered development of germs. As well say that we crush germs in the movement cure, as that we scald them in the hot air treatment. Dr. Wm. Porter, of St. Louis, has well said: "No practical gain has been made based upon the hypothesis that the microbe is the factor *per se*. So far as our present knowledge extends, the bacillus is to phthisis as smoke to fire: it may indicate its existence, yet neither incites nor intensifies the combustion."[6]

Phthisis being a disease of hereditary or acquired tissue degeneration, its rational treatment must lie in tissue restoration, in the use of such measures as will arrest retrograde action and, if possible, restore the degraded cells to their normal condition. Dr. Joseph Jones, of New Orleans, La., says the remedies of the greatest use appear to be cod liver oil, phosphates and hypophosphites of iron, zinc, sodium, potassium, strychnine and the bitter tonics.[7] For a clear statement of a rational treatment we may well refer to "Fothergill's Handbook of Treatment," pp. 199–212, and fully endorse it: "Every case has its own peculiarities and its own exigencies, and must be studied in detail." No routineism, whether with germicidal intent or otherwise, can lead to victory.

If the importance of an easily digested oil in the treatment of phthisis, preventive and curative, required emphasis, we need only refer to the "blubber"-eating people of Greenland, Lapland and Iceland, where consumption is never indigenous, and where, when imported, seldom extends to the second generation.[8] Yet in these countries all the conditions that tend to the disease are present—a low altitude, a damp atmosphere, and a most inhospitable climate; homes, if not built beneath the earth, usually built of earth, innocent of ventilation and cleanliness, with their occupants packed together like sardines, that they may maintain the greatest possible bodily warmth.[9]

The absence of fat tends to tuberculosis. Its presence tends to arrest and restore tuberculous degenerations. How, we may not know but, in some way it facilitates metamorphosis, aiding both in the removal of effete matter and in building up degraded tissues. Thus we find tubercle developed in cattle and sheep by starvation through the winter in process of repair after the summer's fattening. Chambers, in his admirable little volume on "The Indigestions," says of oil: "It is itself the material by which life is manifested. Under its use beneficial influences are exerted throughout the whole body. Old wounds and sores heal; the harsh, wrinkled skin regains the beauty of youth; debilitating discharges cease, at the same time the normal secretions are more copious; the mucous membranes become clean and moist, and are no longer loaded with sticky epithelium; the pulse becomes firmer and slower, that is to say, more powerful, for abnormal quickness is always a proof of deficient vitality. Such are the effects, perfectly consistent with physiology, of supplying a sufficiency of molecular base for interstitial growth. To find the easiest assimilated oil, and to prepare the digestion for the absorption of oil, are the main problems in the cure of consumption."

As an important corollary to this we should insist upon the cultivation of a taste for fat, especially in children of a consumptive heredity. Alcohol has been commended as *the* hydro-carbon in the treatment of phthisis, the argument being

[5] Journal of the American Medical Association, June 18, 1887.
[6] Medical Bulletin, Philadelphia, March, 1888.
[7] Journal of the American Medical Association, March, 1886.
[8] "Consumption as a Contagious Disease," by Dr. Rumbold, 1880.
[9] "The Homes of the Edas," by Warreford S. Low, 1879.

that "experiment has shown that the combustion of one grain of alcohol raises the temperature of water 1° centigrade. Cod liver oil in the same quantity brings to a like degree of temperature seven litres of water. Hence, the relative heat-producing powers of alcohol and the well-known nutrient oil are as three to four." In the prevention and cure of phthisis oil does more than produce heat, and if it was otherwise, physiological chemistry does not prove the body an alcohol lamp. In all the alcohols and ethers hydrogen is greatly in excess of oxygen. In ethytic alcohol we have C_2H_6O. Such compounds demand oxygen at any cost. When introduced into the body, either by inhalation or imbibition, instead of oxydizing, they deoxydize the blood and tissues; instead of increasing, they decrease metamorphosis and the generation of heat; instead of generating nervous force, they produce anæsthesia. The demand of the body for an oxydized blood increases the frequency of the heart's action, but through want of energy from want of oxygen the rapidity of debility is substituted for force. Vital metamorphosis is diminished and vital heat decreased. In all treatment we must strive to improve digestion and assimilation, and we can not renew tissue without the removal of that which has become useless. Alcohol "pickles" the tissues; oil aids in their removal and renewal.

Prof. Jaccoud, than whom we have no better authority, in his work on "The Curability and Therapeutics of Phthisis," considers the disease curable in all its stages—not all cases, but curable as are other diseases. In all treatment he relies largely upon the influence of climate, adapting its conditions to the individual case. Notwithstanding Jaccoud's dictum, there are widely differing opinions as to which is the best climate; thus, we find the balmy air of sea-surrounded Orotava praised, the soft warm breezes of St. Augustine, Fla., the fragrant odors and almost tropical warmth of the Louisiana pine-belt, the high cold climate of Colorado, and the damp and chilly atmosphere of lake-girt Michigan.[10] As these widely differing opinions seem but the varied notes of "Home, Sweet Home," we must consider principles and statistics.

Before we can give intelligent advice to invalids we must understand the various elements entering into and producing what we call climate, and their impress upon life, as thoroughly as the etiology and pathology of disease. Webster defines climate as "the condition of a place in relation to the various meteorological conditions, as temperature, moisture, etc."

Climates are mainly created and influenced by latitude, topography, superficial strata and the presence or absence of large bodies of water, and are the aggregate of atmospheric conditions of particular localities at specified seasons. The chief elements to be considered in climatic treatment are: 1, purity; 2, rarefaction, as produced by altitude; 3, dryness; 4, temperature; 5, variability; 6, sunlight; 7, electricity; 8, atmospheric motion. The first and second elements are chiefly influenced by altitude, the others by latitude, configuration, and porosity of the surface and relation to bodies of water.

Dr. Dennison advocates the "dry, cool, rarefied, stimulating and sunny atmosphere of Colorado" because, among other reasons, "cold stimulates and heat depresses." Is not this as fallacious as the Thompsonian dogma, "heat is life, and cold is death?" A limb mutilated beyond hope of recovery is restored through the stimulus of hot water dressings, and a frightful post-partem hæmorrhage is arrested by the stimulus of hot intrauterine injections. "*In media tutissimus ibis*" must be one rule in selecting temperature for the consumptive. An atmosphere that stimulates through altitude, and yet woes to out-door life, is most favorable for the prevention and cure of phthisis. It is not the heat or the cold that tends to cure in phthisis. Robust health may endure an inhospitable climate, but such a climate does not produce robust health in those of marked tuberculous heredity; while in damp air, cold or warm, containing less oxygen than dry air, which is absorbed less readily from the moist membrane, there is diminished oxydation of the blood engorgement of central organs. Dr. D. thinks nightly chilling and sometimes freezing renders the atmosphere "inimical to germ life." We don't know so much about the health of the germ, but we know such conditions are inimical to human health.

Whether from the direct effect of abstraction of moisture from the pulmonary tissue, or the consequent control of pulmonary temperature, or other cause, a dry atmosphere is essential to climatic treatment. Change in temperature, when the range is not too wide, may not injure vigorous life; but the alternations of temperature, the hot days and cold nights, so common in all damp climates, leads to engorgement of central organs —spleen, liver, kidneys, lungs,—to periodic and congestive fevers, to lowered vitality and to consumption, wherever the predisposition exists. Damp, hot days and damp, cold nights produce directly opposite results to dry, high altitudes, where external tissues are hyperæmic and internal organs anæmic. Cold condenses the atmosphere. In cold weather, at low altitudes, the full use of the pulmonary tissue and circulation is not required, and there is tendency to atony and the tubercle cell. In simply cold climates, of whatever altitude, sudden and extreme changes fall heavily upon the exposed lungs, and such changes cannot be avoided. Much of the time must necessarily be spent in artificially heated rooms, too often illy ventilated,

[10] Transactions International Medical Congress, Vol. v.

between which and the out-door air there is a difference of many degrees. It goes for the saying that the advantage of climate is the climate, and not the heated air of the living-room. A climate that permits and invites out-door life is a necessity to satisfactory climatic treatment. Cold and rain confine the patient in-doors; a warm, moist air tempts to indolence, and a hot, dry air leads to idleness and the shade, while a high, dry air of vernal temperature stimulates to out-door life and exercise, and so fills all the conditions of climatic treatment.

Climatic treatment is based upon more rational grounds than the destruction of germs. In an atmosphere rarefied by altitude the pressure upon the surface of the body is diminished and the vessels of the periphery are turgescent, while the viscera are comparatively anæmic. The pulmonary circulation freed from hyperæmia, congestion and obstruction, tendency to hæmorrhage is prevented or relieved, respiration is full and free, the cerebro-spinal functions are more active, the great central glands relieved of remora and congestion, effete matter is more thoroughly removed, the appetite, digestion and nutrition are improved, the desire and capacity for exercise increased, and we begin to feel

> "The wheels are just as strong as the thills,
> And the floor just as strong as the sills,
> And the panels just as strong as the floor,
> And the whippletree neither less nor more,
> And the back crossbar as strong as the fore,
> And the spring and axle and hub encore."

The "hardy mountaineer," with his physical and mental activity, does not owe all his growth to mountain scenery, but illustrates the beneficial effects of altitude. The rarefied atmosphere and the relative anæmia of the lungs, other things being equal, demands and permits full draughts of air, while the brain and all the great vital organs, permitting an unobstructed circulation of the vital current, tissue degradation and deterioration are prevented or relieved.

Prof. Jaccoud says: "Mountainous climates at the height of from 4,900 to 6,200 feet have in reality a double effect: Firstly, a general one, by which the constitution is restored to a healthy condition; secondly, a local one, by which the activity of respiration is increased to a maximum, while the lung is protected from the effect of congestion and hyperæmia. Climates which, on account of their more northern latitude, present analogous conditions of temperature at a lower altitude, produce the same tonic effect. They have not, however, the same mechanical influence upon the lungs, this being entirely due to barometric pressure. Climates with moderate pressure are wanting in the mechanical action of rarefied atmosphere, and there is insufficient tonic and fortifying effect; nor do they possess that special purifying effect peculiar to high altitudes; they therefore fulfil only secondary indications—secondary in themselves, or at the time when they occur. While such climates have no curative effects on the disease and are not preventive of fresh tubercle, they may, on account of having a temperate, or warm, fresh temperature in winter, act favorably upon any preëxisting bronchitis or pulmonary catarrh. Confinement within doors is unnecessary, and much of the time may be spent in the open air without danger of provoking bronchitis or pneumonia, which would not be the case in a more rigorous climate, or one having greater variability of temperature. It is thus seen that climates of the second class, while of an undoubted value in the treatment of phthisis, are only of secondary importance."

Altitude in any latitude that does not permit to the consumptive out-door life loses much of its advantage. If we can find a locality with a comparatively dry atmosphere which at 4,000, 6,000, 8,000 or 10,000 feet will permit patients to live largely out-of-doors, they will at the same time get the benefit of barometric pressure, climate and healthful exercise. Though not a resident of New Mexico, its barometric pressure will range from 4,000 to 10,000 feet, with a climate that will permit and stimulate out-door exercise, with which its hygrometric conditions will rarely interfere.

The damp, cold climate of lake-encircled Michigan is excellent for consumption, but bad for the consumptive, and its statistics prove what science teaches. According to the census reports of 1870 and 1880, it has a higher death-rate from phthisis than any other inland State in the Union. Of its deaths in 1870, 16.4 were from phthisis, and in 1880, 13.2.

In the States lying upon and near either ocean in the northern portion of the United States, notwithstanding their altitude, we have the highest death-rate from phthisis, the acme being reached in Maine, where, in 1870, 25.6 of the deaths were from consumption, and in 1880, 19.2; in New Hampshire they were 22.2 in 1870, and 15.7 in 1880; in Massachusetts, 19.9 and 15.7; in Connecticut, 17.9 and 19.2; in Rhode Island, 20.1 and 14.7; in California, 13.8 and 15.6; in Oregon, 18.2 and 12.1.

The warm, damp air of the Gulf States, with their lower altitude and higher temperature, give much more favorable statistics than those somewhat similarly situated as to moisture, but with more rigorous climates. Thus, the percentage of deaths from phthisis, as shown by the census of 1870 and 1880, were 5.7 and 8.0 in Georgia; 6.4 and 8.0 in Alabama; 7.0 and 9.0 in Mississippi; 7.0 and 8.2 in Florida, and 7.7 and 8.2 in Louisiana.

Colorado and Nebraska, so highly lauded for the influence of their climate on the consumptive, show by the same census a slightly larger pro-

portion of deaths from phthisis than the low-lying but warm States on the Gulf of Mexico. Thus, in Colorado 8.5 and 8.2 were from phthisis, and in Nebraska, 8.7 and 7.0. In New Mexico the deaths from phthisis are given in 1870 as 3.8, and in 1880, 2.5, and in Arizona, 4.0 and 6.9, and this where the native population suffer largely from a specific disease that tends to a type of phthisis.

From the view we have taken of the etiology and pathology of phthisis, as well as from statistics, we conclude that a sanitarium for consumptives in New Mexico, away from the hot springs, with their excess of moisture, upon an arroyo of 4,000 or 5,000 feet above the sea, with cottages extending up the mesa to 10,000 feet, permitting patients to be moved up or down, as their condition permits or requires, will secure to the consumptive all possible climatic advantages and make for them the most perfect retreat known to any country or clime.

Yet we must remember that in all climatic treatment we must "temper the wind to the shorn lamb." In the flat and narrow chest, in tuberculous deposit confined to the apex, or yet more extensive if the purulent stage has not been reached, altitude, high, dry and equable, with a climate that encourages out-door life, is positively preventive and curative, not in a day or a year, but continued until the cure is complete. When caseation and softening are more extended, a mild, dry and pure atmosphere is required, such as may be found in the lower altitudes of New Mexico and in the Carolinas, Tennessee and Georgia. When the tuberculous deposit is extensive, expectoration copious, hectic marked and emaciation extreme, the probabilities of cure are so small that the pleasures of home, where love may make the dying bed "soft as downy pillows are," should not be exchanged for an arduous journey to end in a final struggle away from the comforts and consolations of home and friends.

DISPOSAL OF HOUSE-REFUSE.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY ALFRED LUDLOW CARROLL, M.D.,
OF NEW YORK.

Household life necessitates the deportation of several different kinds of refuse matter, consisting of excremental substances, liquid wastes from the kitchen and the laundry, baths and basins, garbage, sweepings and dust of various sorts. As regards the first of these, the average for each individual is 57 pounds of fæcal excreta and 114 gallons of urine annually; or, for a family of five persons, 285 pounds and 570 gallons respectively. The danger from these is not when they are freshly voided, but after decomposition has set in, favoring the evolution of noxious gases and volatile products of putrefaction. Where atmospheric oxygen has free access, the principal results of decomposition are ammonia, carbonic acid and water; but in large accumulations, where air can not thoroughly penetrate, deleterious compounds are generated, bacterial ferments multiply, and ptomainal products are given off in increased quantity. An additional peril arises where the intestinal discharges are impregnated with the virus of specific diseases, such as cholera, enteric fever, and probably other diarrhœal maladies, though even in this case it seems to be requisite for the development of the contagium that decomposition shall have reached a certain stage. When urine is mixed with fæces, fermentation occurs more rapidly and with greater evolution of volatilized organic products. For these reasons it is of prime importance that such matters be removed from any possibility of communication with the interior of the house, or of its inmates, before they shall have time to decompose; that is to say, for practical purposes, within twelve hours.

But a grievous mistake, made by many engineers and by some superficial writers on hygiene, is to consider the intestinal and renal dejecta as the only things to be cared for, whereas in reality they constitute less than one per cent. of the offensive residua which should be speedily removed from inhabited places. The feathery masses of decaying epithelium from basins and baths, or the organic scourings from soiled clothing, not only afford fertile culture media for microzymes, but are often specifically infected; the culinary outpourings are virtually weak organic broths, responding readily to inoculation; indeed, all the water supplied to the domicile is discharged in so fouled a condition that prudence forbids its retention on or about the premises. There is little difference in the sewage of towns whether excremental matter be admitted or excluded, and in populous communities where "dry methods" are used it is found necessary to construct sewers in addition. Liernur's pneumatic system and other schemes based upon the single view of the manurial utility of undiluted excreta are open to the same objection.

If the arch-enemy of mankind had been asked to suggest the most mischievous method of dealing with these waste products, he could not have devised a more diabolical one than that which is commonly adopted, not alone in sequestered rural regions, but in the majority of villages, and which lingers as a relic of barbarism even in many cities, to wit: the storage of them in pervious privy-pits and cess-pools, whence the festering liquefied filth permeates the soil over a wide area, polluting the surface wells which are usually in convenient proximity, and poisoning with its noxious exhalations the ground atmosphere which is drawn into the basements of ill-constructed houses.

Of the various plans for the "dry disposal" of excreta, the simplest is admixture with dry earth or sifted coal-ashes, using either a shallow cemented pit, a box, or other receptacle above ground, or one of the more elaborate patterns of earth-closets. While this may be practicable for single houses or for very small hamlets, the difficulty of carrying it out on a larger scale is almost insurmountable. It is estimated that for a population of 10,000 more than a hundred tons of dry earth would be required weekly, and the supply and removal of such a quantity would involve expensive machinery. It is an error to suppose that the fertilizing quality of this earth after use will compensate for its transportation. Even when it has been redried and used several times it is no richer than ordinary garden soil, and is absolutely worthless as manure. It many places abroad the tub or pail system is employed with more or less satisfactory results, movable vessels receiving the excreta with or without the admixture of ashes, chaff, or other absorbent or deodorizing substances, and being removed once a week or oftener by the public authorities, the more voluminous remainder of the sewage being reserved for irrigation or "intermittent filtration."

In rural or suburban districts, where there is a reasonable amount of ground about the house, with grass or a small garden plot, liquid wastes may safely be distributed on the surface; not poured persistently in the same spot, after the manner of the average handmaiden, to create an artificial swamp close to the foundation walls, but scattered thinly and alternately over a wider extent of growing vegetation. A piece of land 20x 25 feet will amply suffice to utilize all the "slops" of an ordinary household, if due regard be paid to their distribution, avoiding, of course, the vicinity of the well, if the water supply be derived from this source. A neater but costlier plan is "subsoil irrigation" through a branching system of loose-jointed small drain pipes, laid about a foot below the surface of the ground, so as to distribute their contents within reach of the roots of plants. To render this method effective it is almost essential to collect the sewage in a tank with an automatic mechanism for discharging at stated intervals, since a continual trickling would fail to flow to the terminal branches, and without preliminary subsidence the suspended solids would be apt to clog the pipes in a sluggish current. Too great a descent, on the other hand, will carry all the discharge at once to the farther end of the drains, thus thwarting the purpose of uniform distribution. The proper grade for pipes in this system, according to Col. Waring, who is one of its strongest advocates, is not more than 6 inches in each 100 feet. Beyond the æsthetic consideration of putting things out of sight, this subsoil system has no special advantage over surface irrigation; indeed, where large quantities of sewage are to be dealt with the latter is preferable, if it be intermittent. For both methods perviousness of the soil is a pre-requisite, and a clayey or other moisture-retaining ground should first be thoroughly underdrained; for it is to be remembered that the purifying power of "dry earth" resides not in the earth itself, but in the air contained in its interstices. It is an accepted belief that the bacilli of "nitrification" have their usual field of action in the uppermost two or three feet of a fairly pervious soil, while at a greater depth those which preside over mischievous putrefactive processes predominate. This limitation, however, cannot be arbitrarily fixed, since it depends upon the depth to which the soil is aerated, and in a water-logged earth it may be confined to a few superficial inches. In properly selected or prepared ground the water of sewage (if not too profusely applied) filters downward, leaving its suspended and most of its dissolved matters to the ventilated laboratory above.

A desire for all attainable "modern improvements," conjoined with the imperative demand of the imported domestic vicegerent for "hot-and-cowld-wather-and-stationary-tubs," has brought into general vogue, even in rural abodes, water closets, kitchen sinks, fixed hand basins, and the rest of the complicated paraphernalia of the "water carriage" system, which is a very good system, if the plumbing arrangements be intelligently planned and well constructed, if there be a sufficient water supply to flush and thoroughly cleanse all waste pipes, and if a safe outfall be provided, but which, if made to discharge into a leaching cess-pool or to pollute the nearest stream, to the detriment of riparian residents below, is anything but an unalloyed blessing. If a cess-pool be permitted in connection with such a system, it should be of small capacity, absolutely water-tight, ventilated by means of an air-pipe reaching above the level of respiration, and emptied frequently. Its liquid contents, which comprise about seven-eighths of the fertilizing materials, may be utilized in a garden by either surface or subsoil irrigation, and the precipitated solids deodorized with lime, copperas, or other agents, for deportation to such destination as chance or the public authorities may afford. On a scale of more expensive magnitude, where arable or pasture land of suitable quality is at hand, a well-masoned "settling basin," with an overflow into a distributing tank, answers satisfactorily. In communities with a public system of sewerage the final disposition of the sewage does not concern the householder as an individual, though it should interest him more than it usually does in his collective capacity.

The grosser refuse solids which go under the generic name of "garbage" constitute the bane of social existence, from the domestic "swill-pail" to the "dumps" of large communities. Even where the

corporate authorities assume the duty of gathering them from the separate premises they are usually deposited in an aggregate of nastiness at some convenient spot on the outskirts, whence their exhalations vitiate the atmosphere for miles around, or, mixed with mineral rubbish of different kinds, are used by some contractor to fill in prospective building sites, for the gradual murder of future tenants. The common rustic makeshift of burying them in casual shallow pits handily contiguous to the domicile must in time overtax the disinfectant capacity of any soil, and is, as a rule, rather less advisable than the prevalent urban practice of throwing them into a neighbor's gutter or over the roadway. The best way to get rid of such things is, unquestionably, to burn them. Cremation is the manifest destiny of organic matter in all populated places. It means a rapid and innocuous, instead of a slow and possibly dangerous, process of oxidation. In either case organic substances are never destroyed, but their chemical compositions are changed and their elements are profitably recombined in nature's laboratory. In the most humble household the incineration of vegetable matters may be easily effected in a cooking stove or range, if they be put in a little at a time. An ingenious metallic pail with a water-sealed cover and a hinged grated bottom has been anonymously invented by a member of this Association, in which, when placed over one of the openings of a range, a considerable quantity of garbage can be inodorously dried to the point of combustibility and dropped into the fire. On a larger scale furnaces of different capacities are in common use abroad and to a less extent here, which cremate, without offense and at small expense, all private and public refuse, including slaughter-house offal, street sweepings, etc., from small villages up to great cities. One of the first of these, I believe, in this country has been for some time in successful operation on Governor's Island, in New York harbor, where the orderly in charge informed me that the only element of the garrison jetsam which was passingly malodorous was an occasional burnt-offering of old shoes. In some instances the mineral detritus, which forms a large percentage of city refuse, after being thus freed from organic admixture, is converted into a serviceable cement, as is notably the case in Leeds, where the outlay for maintaining the "destructor" is much lessened by the sale of the resulting product. But, aside from any actual pecuniary return, the economy of this plan of combustion, as compared with other methods of disposal, should commend it to every corporate government. In the notorious Whitechapel district of London, where it formerly cost from half a dollar to a dollar a load to cart away to a distance the household refuse and "dust," all the contents of the East End bins are reduced to a harmless mass of clinker at about one-twelfth of the expense by means of a series of strong draught furnaces, which consume all gases generated during the process. The day is probably not far distant when this method of purification by fire will be adopted for organic waste substances wherever civilized men dwell together. Meanwhile it is the part of wisdom to prevent their accumulation either above or under ground.

If an apology be due for this brief presentation of rudimentary considerations before an assemblage principally composed of experts, my excuse must be a desire to remind a wider audience, through the publicity given to our proceedings, that the "dry methods," exclusively advocated by a few doctrinaires, are applicable to a very small part of our deleterious wastes; that sewage farming and other schemes for irrigation and filtration involve separate treatment of precipitated solids; that the best devised system of sewerage still leaves on our hands an enormous residuum which must be otherwise dealt with; and that no one method of refuse-disposal will satisfy the diverse needs of households and communities.

THE TREATMENT OF CYSTIC GOITRE BY ELECTROLYSIS.

Read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, held at Newport, June, 1889.

BY E. FLETCHER INGALS, M.D.,
OF CHICAGO.

In a recent paper upon the treatment of cystic goitre,[1] Thomas M. Hovell, F.R.C.S.E., recommends Sir Morell Mackenzie's method, a description of which was first published in 1872.[2] He compares this plan of treatment with the methods advised by the authors of the leading English and American works on surgery, and unless he is too enthusiastic in his support of Mackenzie's treatment, it is a matter of surprise that a method so efficient and safe should have been nearly ignored by eminent surgeons, while operations of doubtful utility and much hazard have been given the preference. In Holmes' System of Surgery, 1883, Mackenzie's method is recommended as the best. However, Mr. Bryant[3] apparently gives preference to simple tapping of the cyst, or injections of an alcoholic solution of iodine or of the perchloride of iron. In cysts of the isthmus he recommends incision into the cavity as a good and successful operation. With these recommendations Mr. Hovell takes issue on the ground that tapping is very rarely successful and that the irritating injections tend to cause inflammation, which may be excessive, without

[1] Wood's Med. and Surg. Monographs.
[2] London Lancet, May 11, 1872.
[3] Practice of Surgery, 1884.

providing for checking of hæmorrhage when iodine is used, or for the escape of pus in either case.

Mr. Bryant's recommendation for incision of a cyst of the isthmus, or free incision of any cyst as soon as it has suppurated, is objected to as being unnecessarily severe and dangerous.

Mr. Erichsen[4] recommends tapping, or injection of tincture of iodine, and refers briefly to Mackenzie's method.

The late Prof. Gross[5] enumerates six methods of treatment of cystic goitre, viz: the seaton, puncture, injections of iodine, incision, excision, and electrolysis, and states that all are more or less serviceable but not free from danger.

Mr. Hovell agrees with Mr. Bryant that the treatment by seaton is dangerous, and cites Billroth, who twelve years ago spoke unfavorably of incisions, but reported thirty-five cases treated by injections of iodine, with twenty-nine cures and one death. Billroth had operated eleven times by von Brun's method, *i. e.* incision of the sac and stitching its walls to the skin, but of these three had died.

Mr. Hovell considers excision a very serious operation; thus from his comparison it appears that Sir Morell Mackenzie's operation is far superior to any other; however, he does not consider electrolysis. Without informing us as to the actual results of Mackenzie's method, except in two cases treated by himself, he leads us to infer that it is practically free from danger and may be expected to cure the case in from three weeks to four months, and that in the majority of cases the duration of treatment will not exceed eight weeks.

Sir Morell Mackenzie's treatment consists in tapping the cyst with a trochar, the canula of which corresponds in size to a 7, 8 or 9 English catheter. After the contents have escaped, he injects into the cyst a solution of perchloride of iron (℥ij. to aq. ℥j.), which is allowed to remain three days, the canula having been corked and kept in position by a tape passed about the neck. At the end of this time the plug is removed, and if suppuration has taken place the cavity is treated like a chronic abscess; but if suppuration has not occurred the injection is repeated and managed as before. After suppuration takes place poultices are applied and the cavity washed out through the canula several times a day with some antiseptic solution.

This method seems to have been followed by most excellent results, but my personal experience with electrolysis, in two cases, leads me to believe that it sometimes cures more rapidly than, and is at the same time devoid of many of the inconveniences of, the treatment just described.

Case 1.—Mrs. S. consulted me in 1884 on account of a cystic goitre of the right lobe, which I found to be an inch and a half in diameter. I aspirated this two or three times and drew off at at each about an ounce of dark, thin blood or bloody serum. This would be immediately followed by the escape of clear, red blood if the aspiration was not at once discontinued. About one-third of the tumor was found to be of a solid character. Finally I introduced an electrolysis needle into the sac, and placing the opposite pole over the tumor, passed through it for about ten minutes an electric current from six to ten La Clanché cells. This operation was repeated three or four times, when the sac was found not to refill. About three years afterward I found the parts in the same condition. The solid portion of the tumor remained but had not increased in size, and the cystic portion had been entirely cured.

Case 2.—G. L. J., cystic goitre of several years' duration. Patient came to me in the middle of January, 1889, with a history of having had the cyst tapped and injected with iodine and other substances several times during the past two years; also of having had it laid open, and of having worn a seaton in it for several months. I found a cyst in the right lobe of the thyroid gland about two and one-half inches in diameter, which was found to contain three ounces of thin, dark blood. I aspirated the cyst and injected it with carbolic acid several times, as follows:

January 19—℥ss of 5 per cent. aqueous solution, which was drawn off and followed by ℥j of a 20 per cent. solution in glycerine.

January 26—♏xl of a 30 per cent. sol. in glycerine.

February 2—♏xxx of a 30 per cent. sol. in glycerine.

February 9—♏xxx of a 60 per cent. sol. in glycerine.

February 16—♏xv of the 95 per cent. acid, full strength.

The treatment proved of littl or no benefit, for on the 23d of February I found the cyst about the same size as at the beginning. I then introduced two platinum needles into the cyst about an inch and a half apart, and passed through them for twenty minutes the current from four diamond carbon cells (similar to La Clanché).

March 2—Cyst much smaller; repeated the treatment.

March 9—Cyst still smaller; repeated the treatment.

March 16—Repeated the electrolysis in the solid portion of the tumor, the cyst being imperceptible.

March 23—Cyst has not reappeared, and is believed to have been cured.

Thus the cyst that had resisted for many months various other forms of treatment, was completely eradicated by electrolysis in less than

[4] Science of Surgery, 1884.
[5] System of Surgery, 1882.

four weeks. The strength of the current employed was regulated by the patient's ability to stand the pain it caused. A month later, when the patient was last seen, he continued well.

Throughout the treatment I was assisted by Dr. J. E. Rhodes.

No. 70 State street.

NOTES ON THE PARASITIC THEORY OF ALOPECIA AREATA.

Read in the Section of Dermatology and Syphilography, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY LEWIS WICKHAM,

INTERNE TO THE HÔPITAL ST. LOUIS, PARIS.

So long as a specific parasite for alopecia areata remains undiscovered or is not proven beyond a doubt, so long will the parasitic theory as applied to this affection encounter many adversaries. In favor of this theory in default of the parasite itself there are certain facts of contagion which are definitely proven, and which cannot be regarded as simple coincidences. Among the cases of alopecia which we have had occasion to study in the wards of the St. Louis in the services of Drs. Hallopeau and Vidal, we have noted different ways of transmission from one individual to another of variable degrees of importance.

Here are certain examples of the first order of facts which we are able to see quite frequently:

First. A small girl is affected with alopecia; her sister sleeping in the same bed is ere long attacked with the same disease.

Second. Three children of the same family are attacked with alopecia at short intervals from each other.

Third. A small girl living in the country came to pass a few days with her relatives in town, where a child has alopecia. One month after the child from the country presents plaques of alopecia.

It is to be especially understood that the facts we report in this communication are determined by histological examination. Other instances of the same nature might be cited, but it is unnecessary, as we do not claim that the facts herein cited are rare. The adversaries of the theory may insist that the cases cited are those of simple coincidence, or occurring in members of a family under the same predisposing influences. But we have here two examples of a second series of facts which give a more clearly defined manner of contagion.

First. A young man seeks advice for a plaque of alopecia situated over the right temple, a place which was rubbed by the rim of his helmet, and which had existed for a month. He informed us that about two months previously he had worn the helmet of a friend who was affected with alopecia. This is not all. The plaque was not circular, but its invasion followed the part marked by the border of the helmet, and actually formed a line of alopecia from 2 to 3 centimetres broad in front, and from 8 to 10 centimetres behind, which corresponded precisely to the part rubbed by the edge of the helmet.

We now come to an observation of transmission which is clearly marked, which we have made quite recently.

Second. Four printers presented themselves at M. Vidal's clinic for diseases of the scalp, April 10, 1889. They were afflicted with alopecia and worked side by side in the room. They, themselves, were convinced that the disease was mutually contagious and came to obtain prophylactic measures for their fellow workmen as well as to get relief for themselves. Investigation revealed the following facts: F., æt. 25, perceived a plaque of alopecia on the vertex about the size of a 25-cent piece in July, 1888. Some time after he noticed another of the same dimensions on the right temple. In September, 1888, L., æt. 42, who worked at the side of F., noticed a plaque of alopecia on the nape of the neck. In October and December C., æt. 40, and D., æt. 35, became affected, the former on the nape of the neck, while the latter presented a plaque on the chin.

We investigated as to the presence of nervous complication with a negative result. On the other hand, in both instances the lesions developed quickly. In these cases it seems to us little doubt can exist of their transmission. These journeymen, thirty in number, working side by side in a small room, often exchanging caps, which served, it seems to us, as agents of transmission. Furthermore, these workmen take but little care of their scalps, which we believe greatly assisted in the transmission of the malady.

Would one still attribute the basis upon which these facts are founded to coincidence alone, or to similar conditions of life?

But the parasitic theory is further favored from a clinical standpoint as cited in some of the classic works on dermatology, the most conspicuous of which are the cases of transmission spoken of by Hallier.

It is in France principally that the most striking observations have been made. One can recall to mind the epidemic of alopecia areata in the school of Nogent, in which thirty pupils were attacked in succession. The diagnosis was confirmed by M. Besnier. Still more recently this learned dermatologist of the St. Louis has brought out in a report on alopecia areata which was presented to the Academy of Medicine July 31, 1888, two observations of value which of themselves might well serve as a basis upon which to found the theory of contagion. The first is taken from the report of M. Leon Cohn in May, 1888, on the consecutive occurrence during the month of twenty cases of alopecia in the Regiment Sapeurs-pompi-

ers of Paris. In his official report to the Minister of War M. Leon Cohn writes: "We seem to furnish a most convincing argument in favor of the contagion of alopecia, from its prevalence and successive development in the regiment of Paris. This regiment by its commingling with the population of the city renders it the most intimately associated with civil life. A regiment, again, where the form of service exposes the men to mutual contagion. The sapeurs-pompiers are dispersed every night in small groups to posts where the same cots, and more especially the same bedding is used. There were in all seventy-seven successively affected." Such is the statement of this learned military surgeon. It may be well to add that this regiment had not been exposed to any nervous shock and no nervous disturbance had been noticed. None of those attacked were present at the tragic drama caused by the fire at the Opera Comique the month before.

The second observation reported to the Academy by M. Besnier is that of M. Leloir, of Lille, This case, remarkable as it is, is common in France. We give it here, in closing this series of clinical facts, because it is especially applicable to demonstrate the point we wish to make in this communication.

M. X., æt. 26, a pharmaceutical student, with apparent robust health, had been a victim of alopecia areata of the beard for three years. He sought medical aid in 1885, the disease having at this time invaded the scalp. A few months later he brought an intimate friend who had lived in the same lodgings with him, and who had a few weeks before been attacked with alopecia. Several months passed, when this same friend returning from a tour brought his mistress, who had also developed the disease. But this is not all. X, before consulting me, had spent his Easter holidays at his home; he took no precautions, using in common the same comb, brush, etc., employed by other members of the family. Some months after he returned from his holidays he came to inform me that his mother, one of his brothers and his little sister had been attacked with alopecia. Soon after this I had the satisfaction of examining them and confirming his statement.

These various observations are well calculated to force the conviction as well as to demonstrate the fact that there exists among the alopecias called *peladique* at least *one form of a contagious nature.*

We are far from denying the existence of a form of alopecia of neurotic origin. It seems to us absolutely certain, after having studied most carefully the clinical histories of numerous cases of alopecia, that certain cases are of trophoneurotic origin. The experiments of Max Joseph in 1886, who produced alopecia in small animals after section of the posterior branch of the second cervical nerve immediately behind the ganglion, as well as other investigators, prove conclusively that alopecia may be produced by neurotic disturbances. But this is no reason why one should deny the possibility of an alopecia which is contagious; for, aside from all other considerations, the observations which we have given are sufficient in themselves to establish the fact that certain cases of alopecia are contagious and consequently of parasitic origin.

Let us look at the objections which may be urged against the theory of contagion:

1. One of the first arguments is drawn from the opinion that, if we have here a contagious disease, the foci of transmission should be more numerous. We should possess a series of facts in themselves convincing. Healthy children should not be able to sleep in the same bed with those afflicted with alopecia without contracting the same. In schools, where one so frequently sees the disease, it should multiply in abundance. This argument does not seem to us to be of any great value. Against this we have what seem to us direct evidences of contagion from husband to wife and *vice versa.* Elsewhere, but in the same group of contagious diseases, we find some which are irregular and capricious in their mode of transmission. Why is tinea tonsurans not transmitted to adults? Why does one subject remain free in an epidemic of scarlatina? These instances are common and well known, yet no one doubts their contagious nature. Contagious alopecia is simply difficult of transmission, requiring favorable circumstances which are not always encountered.

2. The parasite has not been discovered in spite of numerous researches, and experiments by inoculation have given a negative result.

These arguments prove nothing either for or against the theory of contagion. There are not wanting diseases truly parasitic in which the parasite remains dormant for an indefinite period of time.

3. In a different way and withal of more importance is the argument drawn from the histological study of alopecia areata. The contagious theory seems here to be at fault, and the importance of this seeming default merits a careful consideration of the facts connected therewith.

First, let us consider the histological appearances as observed in the four cases which were carefully studied, the report of which has already been published. We will give an outline of this report: The plaques of alopecia present in their centre small broken hairs. They are short, being only 2 to 4 mm. in length. Thick and of a dark color at their free end, they are pointed, small, and of a light color at the root. The general form corresponds to the mark of exclamation (!). The hairs are sometimes adherent, but a slight traction is sufficient to dislodge them. Under the microscope the enlargement of the free end is seen

to consist of nodules or swellings which give an irregular contour to the hair shaft. As the root is approached the swellings become pale, transparent and of very small size. The medullary canal is irregular, broken, and the presence of air bubbles is especially noticeable. At the margin of the plaque the hairs are easily detached, and they present the same appearances already described. This, in the main, is the histological description, and one is certainly obliged to acknowledge here all the characters of general atrophy of the papilla of the hair, *dystrophie*, due to some nervous disturbance. The histological study seems, therefore, to disfavor the idea of contagion. But can we not find a basis upon which this discrepancy may be satisfactorily explained? We think so.

M. Besnier has recently made a number of clinical and histological observations which throw much light on this subject.

Atrophic or *athrepsic* lesions of the hair in alopecia may be due to various exciting causes acting directly on the hair papilla or through the mediation of the nerves as reflex impressions.

Far from contesting that there are neurotic changes in the hair follicle in different forms of alopecia, the problem, on the contrary, would be impossible to understand were it not for the intervention of the nervous system. Even if the specific agent which produces alopecia areata were discovered, that of itself would not explain the changes wrought in the hair papilla.

This, then, is the prevailing idea among the majority of the dermatologists of France: *That there exist two distinct diseases called alopecia (paladique). One is a trophoneurosis. The other is due to a parasite which acts indirectly on the hair papilla through the mediation of the nervous system.*

MEDICAL PROGRESS.

TREATMENT OF WHOOPING-COUGH.—FRIEDRICH SCHILLING (*Münch. Med. Woch.*) has treated sixty-two cases of whooping-cough by means of inhalations of chloroform, the patients varying in age from 10 weeks to 12 years. A tablespoonful of tepid water is poured into the boiler of an atomizer, and as many drops of chloroform are added as the patient is years old. If after a week's treatment no improvement is observed, three times as much chloroform is used. Nothing but cold water is placed in the cup which receives the tube from the atomizer. As the chloroform evaporates before the water, the patient should begin the inhalation a little before the aqueous vapor appears. The inhalations should continue until all the water has evaporated from the boiler; they should be repeated four times in 24 hours. The good effects of this treatment are manifested in a few days; in a week the coughing spells diminish in intensity and frequency. In half of the cases treated by Schilling the convulsive period was replaced by the catarrhal period after two weeks of treatment. In no case has the reporter seen the persistence of the convulsive cough to the fifth week. On the contrary, four cases were cured in the first week; in twenty-eight cases the catarrhal period was reached by the end of the second week; in twenty-one by the end of the third week, and in eight cases in the course of the fourth week.

Inhalation of the vapor of carbolic acid previously employed by the reporter, gave less satisfactory results; on an average the convulsive period lasted until the fourth week.

As for antipyrin, although it may be true that it has effected some rapid cures, it has also completely failed in others.

Nasal insufflations of benzoate of sodium have given very uncertain results. Such insufflations, and indeed the vapor of carbolic acid as well, are very disagreeable to children, while they willingly inhale chloroform.

DOSAGE OF EXALGINE.—In a recent thesis GONDINAU insists upon the antithermic properties of exalgine, which constitutes, according to Dujardin-Beaumetz, one of the best substitutes of antipyrin. The dose is from 0.25 to 0.60 centigrm. at one time in 24 hrs. Exalgine is not soluble in cold water, but it dissolves readily in weak alcoholic solutions; it has no taste, and may be given in powder or in aromatic solutions. A good formula is the following:

Exalgine	2 grm.
Tr. orange peel	5 grm.
Syr. orange flowers	30 grm.
Distilled water	128 grm.

Each tablespoonful contains 0.20 centigrm.

—*Jour. de Méd. de Paris.*

THE CAUSES OF ACQUIRED IMMUNITY FROM INFECTIOUS DISEASES.—After giving a résumé of the ideas of Jaccoud and Bouchard on this subject, JASIEWICZ makes the point with them that immunity is first acquired by the presence of microbes and soluble substances secreted by them, and then by the vitality of the cells creating a constitutional state comparable with natural immunity. But this immunity is temporary, and even if it appears permanent it is because the individual conditions have changed; in fact it is influenced by species, race, individuality and age. Thus, the adult dog is refractory as regards splenic fever, while the young dog succumbs to it. The natural immunity of the fowl to the same disease is destroyed by lowering its temperature.

Jasiewicz draws the following practical conclusion: The immunity conferred by infectious diseases or vaccination being transitory, it becomes

necessary to vaccinate frequently. He believes also that the organism thus acquires not merely an immunity from the disease against which it is inoculated for, but also against other virulent affections. He believes that morbid entities are not as dissimilar in their causation as they appear, but that they may be transformed, the one into the other, according to the mode of entrance of the disease, or the particular condition of the soil in which they are received. This somewhat audacious theory has been stubbornly defended by its advocate for several years.—*Jour. de Méd. de Paris.*

TREATMENT OF CHRONIC ADENITIS AND COLD ABSCESS BY INJECTIONS OF NAPHTHOL.—In his inaugural thesis DR. H. LASSERRE mentions the following objections to the treatment of these cases by means of iodoform ether:

1. Violent pain produced by the sudden distension which follows the injection. This distension sometimes leads to extensive sphacelus of the skin, or to compression of neighboring organs.

2. A very slow cure, because the injections must be made at points widely separated from each other, and must be repeated three or four times.

3. The danger from ether, which sometimes causes profound sleep.

Furthermore, iodoform, when injected into large, irregular cavities, may produce poisoning.

Naphthol is a harmless and powerful antiseptic, and is comparatively insoluble. One gram may be dissolved in a litre of water with the addition of 50 grams of alcohol.

The strong solution of Brouchard is recommended for injections:

Naphthol B	5 grams.
Alcohol (90°)	33 "
Warm distilled water, q. s. ad.	100 c. c.

Filter while warm.

When required for injection the flask is plunged in a hot water bath. The syringe, meanwhile, is placed in a warm antiseptic solution. These precautions are taken to prevent the precipitation of the naphthol and clogging of the needle or trocar. The pus is evacuated and the antiseptic solution slowly injected.—*Le Bul. Méd.*

SUSPENSION TREATMENT OF TABES DORSALIS.—DRS. BIANCHETTI and MORINA give the results of their experience in the suspension treatment of tabes dorsalis, etc. The former reports eight cases of tabes treated in this manner. In three cases the treatment had to be discontinued on account of impairment of sight produced; in five excellent effects were obtained, the lancinating pains, the gastric and bladder disturbances, the incoördination, the weakness of the lower limbs and the sexual impotence being markedly influenced for the better. The number of séances varied from 20 to 53. The favorable effects of treatment were also seen in the improvement of nutrition. The frequency of the pulse and respiration was increased during suspension and the spinal column was increased in length from 2 to 4½ ctm.

Dr. Morina reports 21 cases of tabes treated by this method, together with cases of spastic paralysis and paralysis agitans. In about one-half of his cases improvement was obtained by suspension, while, on the contrary, the treatment was badly borne by other individuals and had to be discontinued.—*Congress of the Italian Med. Assn., 1889.*

A CASE OF LIPOMA.—BILLROTH reports the case of a patient with an enormous development of fat. Diffuse lipomata, he says, of congenital origin, are sometimes seen on the hands and feet and are often associated with syndactylus and polydactylus. Certain cases are also seen in which we may speak of lipomatosis, which appear as non capsulated lipomata upon various parts of the body, especially the neck and throat. In the present case the arms and shoulder regions are of enormous size, while the forearms are rather slender. From the history it appears that the trouble began to appear six years ago, with redness, swelling and pain. The redness and pain disappeared, while the swelling increased, until three years ago. If the history is correct, the case may have been one of erysipelas, followed by elephantiasis.

ACID SUBLIMATE SOLUTION IN DIPHTHERIA.—DR. WM. KRAUSS has translated for the Memphis *Journal of the Medical Sciences* an article by DR. REMERT, of Frankfort on M., upon the above subject, of which the following are the essential points:

The solution employed is that of Laplace, one part of sublimate and five of tartaric acid to one thousand parts by weight of water. The object of the acid is to prevent coagulation of albumen, which often acts as a barrier to the action of the drug. Forceps are wrapped firmly in absorbent cotton, saturated with the solution, and with them the membrane is ripped off from below upwards. This is repeated in an hour. After this, simply touching the denuded spots twice daily with the solution is all that is required. The one aim of the treatment is to remove the infection mechanically. This is not, however, an easy or a pleasant procedure, and in order to carry out the treatment successfully great energy is needed.—*The Obstetric Gazette.*

DURING the past year five surgeons have died in India from cholera contracted in the discharge of their duty.

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SATURDAY, FEBRUARY 15, 1890.

OCULAR DEFECTS AND NERVOUS DISEASES.

At a meeting of the New York Neurological Society, March 1, 1887, DR. GEORGE T. STEVENS read, by invitation, a paper entitled "Irritations Arising from the Visual Apparatus Considered as Elements in the Neuroses," the main proposition of which was expressed by him as follows:

"Difficulties attending the functions of accommodating and of adjusting the eyes in the act of vision, or irritations arising from the nerves involved in these processes, are among the most prolific sources of nervous disturbances, and more frequently than other conditions constitute a neuropathic tendency."

This conclusion was said to be based upon observations of more than five thousand cases of nervous diseases in private practice, and a considerable number of cases in public institutions. He illustrated his views by histories and photographs of cases, principally of chorea and epilepsy, in the latter of which diseases especially he reported very remarkable results from treatment based on this theory. Out of sixty-four consecutive cases of well-marked epilepsy, in which treatment had been directed, with one exception, exclusively to ocular conditions, thirty-two had remained free from attacks for a time varying from several months to seven years; twenty-one had shown such marked improvement as to indicate that the ocular conditions were the cause of the disease; and although eleven cases had, thus far, proved refractory to treatment, he believed this to be due rather to the complicated nature of the ocular disorders than to independence of the two conditions. In the causation of epilepsy he laid more stress on insufficiencies of the external muscles of the eyeball than on errors of refraction and accommodation. The treatment of these incoördinations by glasses he had found unsatisfactory, and preferred, in most cases, to restore the balance of the muscles by graduated tenotomies.

In the discussion which followed, DR. AMBROSE L. RANNEY endorsed the statements of Dr. Stevens from his own experience, and he has since embodied substantially the same views in his recently published work on nervous diseases.

The novelty and importance of the opinions advanced naturally excited much interest and some incredulity, and the proposition was made to test the correctness by trial on a series of cases to be treated by Dr. Stevens, under the observation of a committee of the Neurological Society. The committee, as originally constituted, consisted of Drs. E. C. Seguin, W. R. Birdsall and M. A. Starr, neurologists, and W. O. Moore and David Webster, ophthalmologists. To these Drs. C. L. Dana and F. P. Foster were afterwards added, at the request of Dr. Stevens.

The committee reported at a meeting of the Society, November 5, 1889, and after the reading of their report an elaborate reply was read by Dr. Stevens.

By agreement the enquiry was limited to epilepsy and chorea. Twenty-eight cases were furnished, of which fourteen were rejected as unstable, or did not remain under treatment long enough to warrant their being reckoned in estimating the results. Of the remaining fourteen, five were cases of chorea and nine of epilepsy. They were treated solely with a view to remedying ocular defects, and remained under treatment for periods varying from four to thirty months. One patient is mentioned as having had twelve operations and worn twelve different kinds of glasses. The committee report that none of the patients are cured; three cases of chorea and one of epilepsy are improved, one case of chorea very much so, and two cases of chorea and five of epilepsy unimproved. The result in the remaining case is not known. Some of the patients are said to have more numerous attacks than when under treatment with bromides, and in several cases double vision is reported as a consequence of the

operations. The main result of the investigation is summed up as follows:

"In view of these facts, your Committee cannot but express the opinion that, so far as this investigation has warranted a conclusion, the method of Dr. Stevens does not afford a sufficient degree of relief to warrant its adoption or recommendation to the members of the Neunological Society as a means of cure, or as the sole therapeutic measure. It will be noticed that none of the cases have been cured—all remain indefinitely under treatment, a perfect ocular equilibrium not having been secured in any case. If it is impossible to secure such equilibrium, a cure is not to be expected, granting the theory of Dr. Stevens. If it is possible to secure such equilibrium, it is to be supposed that it can be secured within at least two years, yet four of these cases have been under constant treatment for two and one-half years without this result."

Dr. Stevens claimed that all of the fourteen patients who remained under treatment long enough to give his method a fair trial had been benefited—some of them very much so—and supports his opinion by certificates of several well-known physicians who have examined some of the patients in question.

There is no question that serious nervous disturbances often arise from over-exertion of the muscles employed in accommodation and convergence, and that their cause is sometimes overlooked, even by competent neurologists, and if the profession generally should jump at the conclusion that because Dr. Stevens has not, apparently, accomplished all that he claimed in regard to a disease that has always been one of the opprobria of medicine, there is no use in enquiring into the condition of the eyes, in any case in which they are not obviously at fault, it would be very unfortunate.

RESPONSIBILITY IN JOURNALISM.

Medical journals and medical societies, generally take pains to announce that they do not hold themselves responsible for the expressed opinions of their contributors and members; nevertheless there are bounds of propriety, dignity and morality which they cannot transcend without violating duties which they owe to themselves, to the profession and to the general public. When these duties are disregarded the offenders become powerful agents for the dissemination of pernicious influence. It is not sufficient to disclaim responsibility for individual expressions when these expressions are positively derogatory to the character of the journals or societies which give them publicity. The public makes no fine discriminations, and an unworthy utterance borrowing a guise of respectability from its associations goes forth with the bravest appearance of virtue and integrity to delude the thoughtless and unwary.

These remarks are suggested by the perusal of an article which appeared in the September number of the *Medico-Legal Journal* of New York. In the table of contents it appears thus: "*Abortion, Anonymous.*" One need only read it to learn why it is anonymous—the writer dare not append his name to it. It is a weak defense of criminal abortion the object of which is to show that all our laws on this subject should be repealed and women left in peace to destroy their children as fast as they choose. We are not a little surprised that the *Medico-Legal Journal* should have lent its pages to such an article as this. We are informed that "authors whose articles appear (in the *Medico-Legal Journal*) with their names, are solely responsible therefor." Who then is responsible for the anonymous articles? To permit such an occurrence as the anonymous publication of so disgraceful an essay as this one to pass without remonstrance is merely to invite a repetition of the offense. There have been times when there was good excuse for anonymousness, but they were times of despotism and terror. There is no excuse for it to-day, least of all in medical journalism.

"DRAIN SORE THROAT."

In the *Montreal Medical Journal*, September, appears an abstract of a paper by DR. J. C. CAMERON, in which he applies the term "drain sore throat" to an affection not infrequently observed, but very frequently difficult of explanation as to its causation. He was recently called upon to treat ten cases of sore throat in the same family. The malady was of a marked adynamic character and was accompanied by a rash somewhat resembling that of scarlet fever; in six of the cases there were both enlargement and ulceration of the tonsils; and at the outset of the suppuration

in tonsils the appearances were strongly suggestive of diphtheria. Suspecting that the drainage might be at fault, Dr. Cameron caused it to be examined and defects were found in the ventilation of the soil-pipe, sufficient to cause a pollution of the house atmosphere. These seem to belong to a class of cases which, when seen out of series, or where defective drainage has not been or can not be discovered, has repeatedly baffled diagnosis and has frequently mystified the collector of diphtheria statistics. The scarlatiniform rash is also the occasion of mystification, when the throat trouble is less markedly developed than it was in Dr. Cameron's family of sick people. And even where the cases occur in multiples, and where the drainage defects are manifest, there will be room for differences of opinion as to the propriety of classing such cases as diphtheria. Practitioners who have had a marked degree of success with some favorite plan of treating diphtheria will be strongly tempted to look upon the generally favorable termination of this class of cases as one of the beneficial results of their efficient medication. There has been a variety of appellations attached to this disease, such as "drain fever," "diphtheroid," "tonsillar diphtheria," "diphtheritic sore throat," "diphtheria without membrane," and "scarlatinal tonsillitis," according to the different standpoints of the different observers; but the term employed by Dr. Cameron is the clearest and the least suggestive of error. It is not an alarmist's term; it has little of dread in its sound and implies, withal, the idea of prevention, upon the removal of the sanitary defect. These are two points that are eminently desirable in the selection of a terminology which must be pronounced at the bedside and among the laity. In the absence of a knowledge of the true, specific cause, the term "drain sore throat" has the right of currency in that it is clear, measurably descriptive and helpful towards sanitation; but the most commendable point is that it distinctly draws the line between this form of throat affection and genuine diphtheria.

MEDICAL COLLEGE CONFERENCE.

It is obvious that the leading medical colleges in this country have been in the main responsible for the present standards of requirement for medical graduation. The creditable advances thus far secured were attained largely through their instrumentalities. In the future, the power of their concerted influence must largely affect legislation in the several States. We believe that no men in the profession are so well prepared to formulate the higher standards which are needed as are those prominently connected with our leading medical institutions.

It seems eminently desirable that a conference of such men should be held, and that at an early day. Extended discussions, debates and writings have paved the way, and the time is at hand for judicious action. The medical colleges, the medical profession and the State Legislatures should make common cause in this matter, nor rest satisfied until a creditable standard of medical education is made an imperative condition to the practice of medicine in every part of the United States.

We are specially interested in the action of yesterday, February 7, on the part of the medical colleges and schools of Maryland, which comes to us by telegraph.

"BALTIMORE, Md., Feb. 7.—The medical colleges and schools of Maryland, in conference here to-day, issued an appeal to the medical colleges of the United States, asking them to send delegates to the approaching convention of the American Medical Association at Nashville, Tenn., with a view of effecting a reform in the methods of medical institutions in vogue in this country. The following subjects are considered as most likely to come up for discussion: 1. Three years' course of six months' session. 2. Graded curriculum. 3. Written or oral examinations. 4. Preliminary examination in English. 5. Laboratory instructions in chemistry, histology and pathology. There are two schools in Baltimore—the Maryland University and the Johns Hopkins Hospital—that have already adopted the three years' course, but their assistance was asked in the movement and it was promptly given."

We sincerely hope for, and anticipate, a hearty response to this circular on the part of all American colleges which have at heart the advancement of medical education. The time named, the place, and the simultaneous meeting of the Association are opportune. The Convention should be conspicuous for its numbers, for the wisdom of its counsels, and for its formulation of methods for future action.

DR. CHARLES S. WOOD, who was recently elected President of the New York County Medical Association for a second term, died February 1st of Bright's disease. Further reference to his death will be found in the present issue.

EDITORIAL NOTES.

HOME.

THE CINCINNATI POLYCLINIC.—Dr. C. S. Ayres has been elected President of the faculty.

THE CHICAGO POLYCLINIC has a new plant worth $40,000, and is consequently in a very flourishing condition.

THE GRADY HOSPITAL.—As previously announced, the city of Atlanta, Ga., has appropriated $30,000 for a hospital to be named for the late Henry W. Grady. In addition to this $15,000 has been contributed by citizens, and it is expected that the fund will run up to $100,000.

HOSPITAL FOR INFECTIOUS DISEASES IN CHICAGO.—Several ladies of means have undertaken to supply a "long-felt want" in Chicago—a hospital for infectious diseases, particularly diphtheria and scarlet fever. Such cases are turned away from all existing hospitals. The amount of subscription already received indicates success.

DR. HOBART A. HARE, the present editor of the *Medical News*, has been awarded half the prize of $1,600 by the Royal Academy of Medicine of Belgium for his essay upon epilepsy. This is the fourth prize awarded to Dr. Hare for medical treatises—two coming from the Rhode Island Medical Society, and the third being the Fothergillian medal.

SENATOR INGALLS' BILL.—Senator Ingalls has introduced a bill into the Senate establishing a Board of Medical Examiners for the District of Columbia. The bill provides that the Board shall consist of ten physicians or surgeons, three dental surgeons, and, in addition, five homœopathic practitioners of medicine. The term of office shall be four years.

DR. EDWIN WEBB, who was probably the oldest physician on Long Island, died at his home in Hempstead, January 29th, aged eighty-six years. He was born in England. He studied medicine at the College of Physicians and Surgeons, N. Y., graduating in 1825.

DEATH BY ELECTRICITY.—A remarkable accident occurred at Newburgh, January 20th, by which a horse and man were severely injured and another man was killed by electricity. In this case neither the horse nor either of the men was even in c ntact with the wire that carried the fatal current. The current was diverted from the wire, the insulation of which had become impaired, by an iron awning post, which the horse, who was tied to it, touched with his nose. In going to his rescue the man who was killed also touched the post, but the man who was injured simply touched the body of the other.

HOSPITAL FUND.—On January 31st the annual hospital collection in New York City reached the sum of $52,919.

FOREIGN.

MICROBIOLOGY IN BRAZIL.—The Medical Faculty of the University of Rio de Janeiro has recently reorganized its laboratory of experimental physiology, so as to bring it up to the level of modern scientific requirements. It is intended that the laboratory shall also serve for microbiological research, and for the preparation of anthrax virus, etc., for inoculation. The laboratory will be under the direction of Dr. Lacerda.

THE COUNCIL OF THE SEINE.—The Council of the Seine has voted to establish a hospital in the suburbs of Paris for the care of new-born children whose state of health or whose antecedents are such as to give rise to a suspicion of syphilis. The other establishments for assisted children will be maintained as before, and the physicians in attendance upon them will be required to visit the syphilitic children once a week, for which services they are to receive 2 francs per visit.

LA GRIPPE IN PARIS.—During the third week of December there were 333 deaths reported in Paris for a single day, the average for this period of the year being about 200. The great increase in mortality was attributed to the prevalence of the grippe.

A NATIONAL LEPROSY FUND IN GREAT BRITAIN.—Under the patronage of the Prince of Wales a fund, amounting to seven thousand pounds, has been collected in London for the furtherance of researches concerning leprosy. It is proposed to collect five thousand pounds more and with these contributions establish two scholarships; one for the study of the disease in India and other parts of Asia, and the second one to investigate the British and European evolution of the malady. The project has the support of Sir Andrew Clark, Mr. Jonathan Hutchinson and many other leading medical men.—*Brit. Med. Jour.*, Jan. 18.

TOPICS OF THE WEEK.

INFLUENZA AND CHOLERA.

The following extracts are made from the report of the Secretary, Dr. J. H. Rauch, to State Board of Health of Illinois, for the quarter ending December 31, 1889:

The first cases of influenza recognized in Europe were observed in St. Petersburg about the middle of October. At that time it was supposed that the prevalent epidemic had taken its origin in or about Wassali-Ostrow, southwest of St. Petersburg, and Kolomna, sixty-five miles southeast of Moscow, appearing in these regions and rapidly spreading north to the capital. Both these supposed points of its origin are in direct communication by railroad with St. Petersburg, Wassali-Ostrow being the nearest. Within three weeks after its appearance one-half the population of St. Petersburg was rendered prostrate, and by November 12th it seems to have spread over the whole of European Russia. In Asia it was first noticed in Tomsk, a commercial town in Central Siberia, and appeared in the Caucasus about November 11th. It is yet too soon, on account of meagre information, to determine where the epidemic really took its origin. Thence it spread into Finland and Eastern Prussia, and in the beginning of the month of November invaded Berlin, the first cases being observed at the City Hospital in Friedrichstein; thence it spread to Vienna and Paris. By December 20th it was epidemic in nearly all the capitals and large cities of continental Europe. It was first recognized in Boston on December 17th, in New York city December 20th, and in Chicago about December 23d, and probably first among the employés of the postoffice. It is also said of Edinburgh that "the postal and telegraph servants had been the first to suffer." It has extended from the Atlantic to the Pacific, and as far south as Mexico and Central America, practically spreading over Europe and a large portion of North America within ninety days, extending over a greater area and with greater rapidity than any epidemic of which we have a record. The so-called influenza seems to have made its appearance in the large cities first, and afterward to have extended to their immediate neighborhoods. It appears very much as though there must have been some communication, although it is said to appear simultaneously in different localities. I am inclined to think that if the history of the disease is carefully studied some communication will be discovered as incident to its spread. The present epidemic has extended from St. Petersburg to the Pacific coast and Central America within three months. Is this due to the increased facilities for communication and travel?

Since the year 1173 to the present time there have been sixty-two epidemics of the so-called influenza in Europe, or one in about every eleven years. During this period it assumed a pandemic form fifteen times. When it first made its appearance in October, 1889, on the continent of Europe, the nature of the disease was in doubt, many of the medical authorities of St. Petersburg, Berlin, Vienna, Paris, and even in England, and also in this country, took the view that the present pandemic is a modified form ot dengue, the result of temperature, dengue being practically a disease of warm weather and subtropical countries. This so-called influenza, when it appeared in different localities, did not present all the typical features of former epidemics, but did manifest a number of very marked symptoms that are found in dengue. It was also supposed by some that the influenza took its origin from the dengue, owing to the fact that the dengue was epidemic at Constantinople and other points in Asia Minor and Southern Europe during the months of July, August, September and October, and is prevailing even at the present time in the southern part of Europe; and that the dengue, spreading northward from Turkey to Russia, changed in its type as it progressed north until it assumed the present form.

The month of December was a most remarkable one. I have tables prepared showing the temperature and rainfall for the months of October, November and January for the years 1880–1889, inclusive, at the cities of Chicago, Cairo and Springfield. It will be seen for the month of December, 1889, at Chicago, the mean daily temperature was 11.7° higher than the mean for the month for the past nine years. In Springfield, for the month of December, 1889, the mean daily temperature showed an increase of 13°. A similar and more marked contrast is to be noted at Cairo for December, 1889, where the mean temperature was 55.3, against 37.55—a difference of 16.8. The table for January, 1890, shows not only an increase of temperature, but also of rainfall. It is easy to see that this unusual and unseasonable high temperature has produced a general feeling of malaise, preparing or predisposing people to susceptibility to any epidemic influences. In Chicago the epidemic first made its effect manifest in the death-rate for the week ending December 28th, and reached the highest point January 25th, when also the mean temperature was the lowest that had been observed during the present winter. It was two weeks longer culminating than in Boston. From the week ending December 28th to the week ending February 1st 1,208 deaths may be attributed to the malady; of these there were 610 under 5 years of age, a number much greater proportionally than in any other city. Are there more children in Chicago? Nearly two-thirds of the deaths were caused by diseases of the respiratory organs.

Influenza has also made its appearance at Charleston, S. C., but not yet at New Orleans. It is at this time prevalent throughout Illinois.

The disease made its advent in Springfield at the hotels about January 4th. While there have been a great many cases and much sickness, no death is directly traceable to the influenza. The total number of deaths was twenty-three in December and thirty-one in January, an increase of only 35 per cent., while at Chicago there was an increase of over 61 per cent. for the same period. The greatest mortality occurred during the week ending January 25th, when the mean temperature was lower than at any time during the two months under consideration. One of the factors in this slight increase in the death-rate in Springfield was no doubt the absence of alarm or panic, as the fluctuations of temperature were greater in Springfield than in Chicago.

The percentage of increase in the different cities from the time the disease manifested itself to February 1 is: Boston, 2.07; Chicago, 1.12; New York, .51; Baltimore, .263; Cincinnati, .680; Washington, .208; Philadelphia, 1.20.

Occasionally it has been found that when an epidemic of influenza occurs epizootics of the same character prevail among horses, dogs and cats. This was especially the case in 1872–73 in this country, and I am told that cases among horses have recently been noted in Chicago.

A close estimate of the mortality in the Northern States from the disease of influenza so far would reach about 10,000. The disease is gradually spreading southward, but owing to the higher temperature, it will manifest its usual benign character. Relapses occur and the great care must be exercised by the victims while recovering. This was especially noticeable at Odessa and Copenhagen. Its fatality was equaled only once before, and that was during the autumn and winter of 1789–90—just a century ago.

Influenza and Cholera.—One of the most distinguished medical authorities in St. Petersburg recently announced the firm conviction that cholera would follow the epidemic of influenza in Russia, as it had for six times in the past. Dr. Hirsch, who is the best authority on epidemics, is of the opinion that it was an accident, and I concur with him. It is true that in November, 1830, influenza prevailed in Russia before the cholera made its appearance. In January and February of that year the influenza also prevailed in Russia, in March in Poland, April in Germany, May in Austria, Denmark, Belgium, France, Switzerland, England, Scotland and Bohemia, June in Germany, England and France, July in Germany, Switzerland, Sweden, England and Italy. During this time cholera prevailed in Russia, Germany, England and France. In November, 1831, influenza prevailed in New Jersey and Pennsylvania. In November, December and January in the Middle States. In February, 1832, it made its appearance in Georgia. Cholera did not make its appearance in Canada and the United States until June, 1832. In 1833 influenza prevailed in nearly every country in Europe. In 1833–34 outbreaks of cholera occurred in the United States, but there was no influenza. In June, July and August, 1843, influenza prevailed in the United States more generally, with the exception of this pandemic, than ever before, and there was no cholera in the country. In 1847–48 influenza was generally diffused over the Eastern Hemisphere. Cholera was introduced into New Orleans in 1848, and there was influenza in California in January, 1851. There were also cases of cholera in the United States in 1852–54, without any influenza. From January to March, 1873, influenza prevailed generally throughout this country, while cholera was introduced at New Orleans in February; but there was cholera in 1866–67 and no influenza. But the visitation of cholera in 1873 was limited to the valley of the Mississippi.

There is no doubt that at this time there is a pandemic wave of disease spreading over the world, commencing with cholera last July, August, September, October and November in Mesopotamia, kept back by the temperature and cordons from spreading northward and westward, but crossing the Turco-Persian frontier and raging as an epidemic in Central Persia, and at this time is finding its way north. I shall not be at all surprised if cholera obtains a foothold in Russia by way of the Caspian Sea in consequence of the generally bad sanitary condition of Russian towns and villages. But I don't believe that it will spread beyond into the German and Austrian Empires, because of the sanitary precautions taken by the authorities.

In the report on this subject made at the last meeting, September 27, 1889, I said: "It is too early yet to tell whether the present outbreak is the beginning of a new pandemic. In reviewing the introduction of cholera into Europe, it will be seen from the foregoing that in four pandemics it found its entrance by the same routes as the present. Fortunately the near approach of winter will materially assist in preventing its spread or in totally stopping it, independent of the more care now being exercised by the sanitary authorities to prevent its spread than heretofore. While the probabilities are that it may be arrested, still the indications must not go unheeded by those in charge of sanitary matters."

By the 10th of November cholera had spread to the city of Mossul, and by the 1st of December had invaded three-fourths of Mesopotamia and the Turco-Persian frontier, although the mortality of the disease was greatly diminished. Apparently held in check by sanitary cordons and the lower temperature, recent advices show that it has made considerable inroads into Persia, having crossed the Turco-Persian frontier at a number of points. In Central Persia there has been an alarming increase and the inhabitants are fleeing northward toward the Russian ports on the Caspian. A St. Petersburg dispatch of January 27 says that Persian Khorassan is ravaged by an intestinal disease of excessive fatality, its exact nature unknown, 3,000 deaths being reported. At Nur, in Meshed, a district in Upper Persia, as many as 100 deaths occur daily. This town is only a short distance from the Caspian Sea.

"Remembering that this is the route into Europe which cholera has so often taken before," says the London *Lancet*, "the announcement will be regarded as one of no little gravity, the more so because the Caspian port towns and fishing villages have a bad reputation in regard to those sanitary conditions which are known to favor the diffusion of cholera." It is also reported that the epidemic at Bagdad, which had abated toward the end of November, is raging again with renewed fury.

IS THE INFLUENZA CONTAGIOUS?

It is exceedingly difficult to ascertain definitely whether influenza is really contagious, but the history of the present epidemic renders this opinion probable. Coming in a wide-spread wave, extending over an enormous extent of country at once, it is the type of a Pandemic. But the eccentricities of its spread render such an explanation unsatisfactory. We have had the affection here, beyond any reasonable doubt, for four weeks. Yet we hear of its extending, even at this late date, to towns in Europe hitherto unaffected; although in other and neighboring places it has subsided some time ago.—*The Times and Register.*

PRACTICAL NOTES.

CHRONIC RETENTION OF THE URINE.

Englisch divides these cases into two classes: 1. Where there is relative insufficiency of the bladder; 2. Where this insufficiency is absolute. The disturbances arising from this insufficiency react not only on the urine, but also on the bladder itself, as well as on the general constitution. One invariable symptom is the constant desire to urinate. In the beginning this is painless, but later it becomes intensely painful. In some cases the urine is clear and acid when passed, but it becomes alkaline and cloudy on standing a short time. Quite often, just at the end of the micturition, a drop of blood is passed, which is caused by the rupture of one of the small veins in the neck of the bladder. The general symptoms at first may be so slight as not to attract attention, but later they are pronounced, especially when the kidneys are affected.

In mild cases, warm baths will stimulate the bladder to contract; in more severe cases, cold applications to the perineum are of service. If this is not sufficient, recourse must be had to the catheter, without delay.

Polyuria has been observed when the entire quantity of urine has been drawn off. To avoid this, it is advisable to draw off eight to ten ounces, and replace it with an equal quantity of of four per cent. solution of boric acid, which may be repeated in a few hours. As the condition improves, the catheter need be passed but once in twenty-four hours.—*The Times and Register.*

DIABETIC DIET A SUBSTITUTE FOR ARTIFICIAL PREMATURE LABOR.

Prochownick (*Arch. d'obstet. et de gyn.*, Oct,, 1889) comments upon the unsatisfactory results of premature labor, so far as concerns the child. The high mortality of infants prematurely born has led him to seek a substitute. This he appears to have found in the old and abandoned practice of restricted diet. He reports in detail three successful cases which he treated, during the last few weeks of gestation, with a dietetic treatment entirely analogous to that of diabetes.

In his first case, perforation, version and premature labor had been successively employed in previous births. The dietetic regimen was pursued for two months before her last accouchment. The result was a small living child, whose cranial vault, though hard, was still plastic. The child remained healthy and grew rapidly.

His second case was a dwarfed and scoliotic woman whose first delivery was by cephalotripsy, the second by difficult version, the child dying in four hours, the third by premature labor, the child dying at the fifth week. In the fourth pregnancy the author placed the patient on the restricted diet during the last five or six weeks. The child was a male and at birth weighed little more than two-thirds the usual weight. It however presented all the signs of maturity so far as regards the diameters of the head. It lived and throve.

The third case was a secundipara whose first child had been sacrificed by craniotomy. She was placed on the dietetic treatment for four and a half weeks and was delivered at term of an undersized child which lived.—*Brooklyn Medical Journal.*

USES OF BORACIC ACID.

Dr. Lebovicz, in the *Weiner med. Presse*, narrates some uses to which he has put boracic acid.

1. Boracic acts antiseptically. Every soldier should carry an ounce of it in his overcoat pocket, and a handkerchief cut into two triangles for necessary bandages. Simply sprinkling a wound with finely powered boracic acid suffices to insure rapid healing. This remedy being odorless and itself absorbing all odors, the author has used it advantageously in abscesses, ulcers of the feet, caries and necrosis of the bones, and in complicated fractures.

2. In anthrax and after the incision of furuncles it acts well when applied directly to the parts. Forming furuncles should be painted several times daily with the following:

℞.—Boracic acid }
Water, } . . . . . āā equal parth

3. In burns, where the flesh is exposed, it is necessary to be careful with poisonous antiseptics. Boracic acid possesses the advantage of being non-poisonous. He covers the burnt surfaces with a boracic vaseline ointment in the proportion of one to five:

℞.—Boracic acid (finely powdered) 20 parts
Glycerine . . . . . 15 "
Mix, and add,
Vaseline . . . . . 85 " ℳ.
Apply twice daily.

In severe burns with fever, the author combated the fever by the internal administration of the following:

℞.—Boracic acid . . . . . 4 parts.
Glycerine . . . . . 10 "
Water . . . . . 100 "
Syrup of poppies. . . . . 25 " ℳ.
Sig.—A teaspoonful every two hours.

—*The Pacific Record.*

GLYCERITE OF CALF PEPSIN.

Dr. Frank Woodbury advocates the use of a solution of calf pepsin in glycerine, to which he gives the name of glycerite of calf pepsin, as an adjunct to a milk diet for those who are unable to digest the casein of cow's milk, and he claims

that calf pepsin is a more suitable and natural preparation to be used for such a purpose than that obtained from the hog. The process of manufacture is as follows: The stomachs of healty young calves are washed clean with running water, the mucous membrane is dissected off, crushed and treated with glycerine and slightly acidulated water, in which it remains until the pepsin is all extracted, the solution is then filtered carefully, and to it is added a small proportion of the acid phosphate of lime, to insure a faintly acid reaction in the finished product. A drachm of this solution readily acts upon a pint of milk. In the case of infants he recommends that from ten to twenty drops of the pepsin solution shall be given fifteen or twenty minutes after feeding; in adults from one half to one drachm is added to the milk before it is swallowed. Junket made with the glycerite of pepsin from either boiled or unboiled milk is a delicate and easily digested form of nourishment for the sick. —*Brit. Med. Jour.*

EUCALYPTUS IN CANCER.

I lately had a case of cancer of the breast in which the ulcerating surface was about eight inches by six. The odor from the discharge was most sickening and offensive, and it was made worse by the odor of the carbolic acid which they were using. No one could remain long in the room with the patient on account of the intolerable smell. The carbolic acid was stopped, and the eucalyptus disinfectant used. The wound was sprayed with it, as also the lint with which it was dressed; tenax was wetted with it and placed under the wound to catch the discharge, and, by the use of a spray diffuser, the air of the room was filled with the fragrant odor of the eucalyptus. All offensive smell at once ceased, and there was only the smell of an ordinary suppurating surface.

In a case of cancer of the sigmoid flexure where the discharge was frequent and very offensive, the injection of a small quantity of eucalyptus emulsion twice a day stopped the offensive odor, and checked the frequency of the discharges. And in a case of cancer of the neck of the uterus, the offensive smell was stopped, the discharge lessened in quantity, and the tendency to hæmorrhage diminished.—J. Brendon Curgenven, *Brit. Med. Jour.*

SALOL IN BURNS.

The favorable influence of salol in burns, communicated by Tato and Cabatelli, has probably also to be explained by the action of lanolin, with which the authors combined salol as a 3 per cent. ointment. The addition of salol or ichthyol to lanolin he thinks unnecessary for the said purposes.—*Provincial Medical Journal*, Halifax, Eng.

SOCIETY PROCEEDINGS.

Medico-Legal Society of New York.

Annual Meeting, December 18, 1889.

CLARK BELL, ESQ., President of the Society, read a paper on

HYPNOTISM.

The medical profession in America do not give this subject the attention its importance deserves. We know of no medical man of prominence in America who has publicly identified himself with the investigation of this science as some of the most eminent men in foreign countries have recently done.

Dr. Wm. A. Hammond, some years ago, gave the subject considerable attention, and gave public experiments before the Medico-Legal Society, of patients under its influence, exhibiting the usual phenomena of unconsciousness to pain, and entire domination of will power and of action.

The late Dr. Geo. M. Beard was also a student of this phenomenon and, had he lived, would doubtless have contributed to, and have been now conspicuously at the head of the science here. A few physicians here and there have touched it on the border lines, but, as a profession, medical men in America know little concerning it, and the public, who naturally look to them for advice on such subjects, are entirely ignorant of this phenomenon, or the progress made abroad in the investigation of the science.

Hack, Tuke, Ireland, Matthias Roth, Gurney, Myers, in England; Charcot, Binet Fére, Gilles de la Tourette, Paul Regnard, Fontan and Séquard, Azam, H. Beaunis, E. Berillon, Ochorowicz, Ladame, Delboeuf, Montin, Voisin, J. Luys and others, in Paris; Lombroso, Tamburini, Sepilli and others, in Italy; Heidenhan and von Fränkel, in Germany; Gessman, Obersteiner and Kraft-Ebing, in Austria; Broberg and Fred. Björuström, of Sweden, are some of the names of recent authors abroad who treat upon this subject as a distinct branch of science. The experiments at Salpêtrière, conducted under the guidance of Prof. Charcot, have gone to the scientific world in detail for some years, and an International Congress of Hypnotism, experimental and therapeutic, was held at Paris from August 8 to 12, 1889, attended by distinguished men from Russia, Holland, Switzerland, France and other countries, where papers were read upon the propriety of interdicting, by law, public exhibitions of hypnotism, and for regulating its use or practice by legal statutes, as well as upon other phases of the science. The Paris *Revue de l'Hypnotism* is entirely devoted to this science.

In the Medico-Legal Society in January, 1889, the chair called attention to the medical neglect

of this subject, and named a committee to make investigations through the year and report their labors to that body. The majority of the committee did not go forward with the work, and the committee was reorganized, but have, so far as known, made no report, if even they have done any work whatever since their reorganization.

At the recent session of the Psychological Section of the British Medical Asssociation, held at Leeds August 15, 1889, under the Presidency of Dr. Hack Tuke, Dr Auguste Voisin, one of the physicians of la Salpêtrière, Paris, made a communication upon the treatment of insanity and neurosis by hypnotic suggestion and on the application of the method to the moral and instinctive perversion of backward and imbecile children, in which he is reported to have said that, until within the last few years, no serious attempt had been made in this direction, and that it was generally supposed that the insane could not be hypnotized. He had been able to develop this method in his hospital and private practice. Catalepsy ought to be carefully avoided, because the hypnotized individual ought to be able to preserve the use of his senses, especially of hearing. He was convinced that hypnotism was only useful when it was possible to make use of suggestion; and he was firmly of opinion that, as Braid had said, the hypnotic state originated in the nervous system of the hypnotized person. The basis of hypnotic treatment and of suggestive therapeutics detailed the various categories of the insane with regard to whom he had made observations. By this treatment he had cured persons suffering from hallucination and delusions, and from disturbances of special and general sensation. Suicidal ideas and acute and furious mania had disappeared under the use of this method. Cases of insanity were cited which had only been calmed after several hours. The treatment had also succeeded in the mania and agitation observed during the catamenia. Patients in this category had even remained asleep for from six to eight days. The method had also succeeded in dipsomania and in morphinomania. He had also been fortunate enough to cure obstinate cases of onanism in this way, and had applied the method *á la moralization des enfants dépravés.* He had thus completely transformed their habits of thought, and had brought them to love the good, whereas formerly they had loved only the evil. He had also succeeded in curing amenorrhœa in the insane, which was a frequent cause of nervous and mental troubles; he particularly insisted upon this point as proving it was possible to influence the functions of the sympthetic system. The relapses were not more than one-tenth of the cases treated, and this was probably due to the repetition of treatment over a few months. However, the results were definite, and he hoped the practice would be tried in England and have good results.

He said that for success in the hypnotizing of patients many attempts were frequently necessary. Hence he could not give a suitable demonstration at Wakefield; but his place at Paris was open to all the physicians of the Continent. It was immoral to hypnotize healthy persons, being only proper in the case of the diseased. He repeated his statements as to the ailments which could be serviceably treated. For success varied processes were often necessary.

The importance of the subject cannot well be overestimated. Our judicial tribunals are wholly unprepared for the investigation of crimes thus committed.

A prominent judge upon the criminal bench of this city has, as it has been said, expressed doubts as to the existence of such a state as the hypnotized condition, which would affect responsibility for acts committed in that condition.

The public mind cannot be said to recognize it, and the learned and honest judge reflects popular opinion and popular ignorance of the subject.

It is doubtful if the legal profession, as such, are *en rapport* with the scientific truths of this branch of science, as recognized in France judicially in the tribunals.

It is probably true that three-fourths, if not more, of the medical profession in this country are ignorant of what has been demonstrated at Sâlpetrière, and what is recognized as scientific truth at this moment in all foreign schools or universities of learning as to this phenomena. It is no longer an open and disputed question in France, Austria, Italy, Russia, Germany. It is an accepted scientific fact. What is now studied is its phenomena, its problems, its sequella. It is a recognized fact; but what are its phenomena and limitations, is the remaining question.

The questions raised by the editor of the *New York Ledger* are immensely significant and of the greatest importance to the race.

How far can hypnotism, properly administered, be used as an incentive to higher education?

How can it be used as a moral remedy to correct evil habits, bad practices or evil inclinations?

How far can it be used as a means for moulding character and lifting the aspirations to nobler ideas and higher planes of action and of life?

These are the questions of the hour, and these the subjects which should arrest the attention of the learned committee of the Medico-Legal Society.

The Humboldt Publishing Company of this city have taken up the subject, and have published the work of Prof. Fred. Björnström, of Stockholm Hospital, translated by Baron Nils. Posse, M.G., of Boston.

Chapter xi of this work treats of "Hypnotism and the Law." We quote:

Hypnotism comes in contact with the law at more than one point, and many and intricate are

the medico-legal questions which it has already raised. The most important of these questions are:

1. Can the hypnotized be physically or mentally injured by hypnotism?
2. Can the hypnotized fall victim to crime?
3. Can the hypnotized be used in the service of crime as a ready tool without a will?
4. Are the hypnotized responsible?
5. Should hypnotism be prohibited?

We regret that want of space prevents our giving the whole of the chapter which contains an answer to these questions.

The American Journal of Psychology has devoted more space and attention to this subject than any scientific journal on this side of the sea. Its editor is Prof. G. Stanley Hall, President of Clark University, and this journal, while not reproducing an original article from an American author upon this topic, so far as we can recall, has devoted considerable space in its psychological literature to "Hypnotism," as a subject or subdivision, and in this department has noticed and reviewed very much of the recent foreign literature of this department of science, and has also noticed quite generally what has appeared in our American and in the foreign press on this topic.

Prof. Stanley Hall is perhaps one of the best educated and equipped men this side of the Atlantic to lead in these investigations, outside of organized bodies or societies.

His journal must take notice of and record all discoveries, especially as to judicial or medico-legal questions arising affecting responsibility or related to criminal anthropology.

Dr. Ed. J. Cowles, of McLean Asylum, and Dr. Wm. A. Noyes, of the Experimental Station there, are qualified eminently for this work, while Fred. Peterson, M.D., Frank H. Ingram, M.D., M. Allen Starr, M.D., of New York, and others of the junior rising medical men, will doubtless do valuable work in this domain in the near future.

We learn that Dr. Jastrow proposes to prosecute psychological research in the University of Wisconsin; that Dr. Cattell intends similar studies in the University of Pennsylvania; Dr. Wolfe in the University of Nebraska; Dr. James at Toronto; and that Prof. Ladd, of Yale, and Prof. James, of Harvard, will continue their important investigations in psychological and psychical research.

We look for important advances along the line in the coming years of 1890 and 1891.

The importance of these investigations upon medical jurisprudence, upon the tribunals and courts of justice is recognized abroad. Is it recognized here?

Much of what seems now a mystery of motive of action, so pertinent to legal and criminal responsibility, must, in some cases, be involved in this enquiry,

The recent startling and, in many respects, almost incomprehensible case, in which the Hon. Ray Hamilton was so strangely affected, may be shown to be due to the well-defined phenomena of hypnotism.

It is difficult to understand certain phases and complications, in that, as in other curious and remarkable cases, to which our attention has been recently drawn, except by a study of the psychical phenomena of hypnotism.

A common and almost universal error is the popular impression that only weak, sickly, nervous persons, and especially hysterical women, were susceptible to hypnotism. This is a popular fallacy and error. Björnström says, upon this subject:

"Later experiences, and particularly the elaborate statistics of Liebault of Nancy, have shown that almost anybody can be hypnotized. A difference, however, must be made between those whom it is easy and those whom it is difficult to hypnotize.

"Among the former, belong without doubt the hysteric; but otherwise physicial weakness gives no special predisposition. The willingness of the subject, his passivity and power to concentrate the thought or attention on the intended sleep have more importance. Thus it has been found that even the strongest men from the lower classes (mechanics, laborers, soldiers,) are more easily put to sleep than intelligent persons, who voluntarily or involuntarily let their thoughts wander to various objects which distract their attention. It will often be found that those who cannot be hypnotized in the first, second or third *séance*, yet succumb to renewed patient effort."

It was the opinion of Dr. Edward Payson Thwing, as stated to the writer, who had conducted many experiments, that it was doubtful if there was any person who could not be hypnotized, who had sufficient will power to concentrate the thoughts upon a subject, to remain mentally passive, who would not mentally oppose or combat the influence of the hypnotizer, or who would mentally yield to it. That after long and repeated trials, under favorable conditions, with patient effort, every one would ultimately succumb.

It is a subject which should not be longer neglected or ignored, and to which the earnest attention of advanced students of medical research is earnestly suggested to meet the popular demand for light upon the science, and researches regarding its phenomena is now the duty of such of our medical men who are competent to grapple with the subject.

THE management of the surgical clinic in the University Halle has been entrusted to Professor Oberst and Docent Dr. Krause, as the successors of Prof. Volkmann, recently deceased.

DOMESTIC CORRESPONDENCE.

A Small Solid Tumor in the Left Inguinal Region Caused by a Fish-bone.

To the Editor:—The following case seems to me worthy of publication from a diagnostic standpoint, the more so as our works of pathology and surgery give us very little information on this subject.

C. I., æt. 63 years, began to notice an enlargement in the left inguinal region about the end of last February, which at times caused some slight pain, and during the last two months seemed to increase rapidly in size. Dr. I. B. Rice, of this place, was kind enough to send the patient to my office, stating that, though he had not come to a definite conclusion, he had some apprehension that it might be of a malignant nature. On examination I found a hard, slightly nodular tumor, situated about 2 inches above Poupart's ligament, running parallel to it and about the size of a large thumb. It was not specially painful on pressure and could apparently be lifted off from the peritoneum. Examination per rectum revealed nothing abnormal, no connection between the bowels and tumor could be traced. As it was so hard and not really painful on pressure, an abscess was excluded in the diagnosis; it was also too solid for a lipoma. The thought of a foreign body entered also into our speculation, but then we expected more pain and some fluctuation. Taking the age of the patient into consideration, the circumscribed, hard and nodular condition of the tumor, I must confess that the diagnosis of a cancer could not easily be dismissed from my mind. I thought it, however, a wise plan to keep the diagnosis in suspense until the knife would unravel the secret. On August 6, 1889, I made an incision about 2½ inches long over the swelling through the obliqui muscles, and found that the tumor was really formed by the thickening of these muscles. This infiltration was again caused by a fish-bone lying in a vertical direction over the transverse muscle. It was not encapsuled, nor was there any sign of former or present suppuration. The parts really presented such a fresh appearance as if the bone had been pushed in there shortly before the operation.

Foreign Body in the Right Bronchus.—Drs. Smith and Cheadle, after reporting a case (*Med. Chirurg. Trans.*, Vol. lxxi, p. 113), give statistics of thirty cases of foreign body in the bronchus. In sixteen cases the foreign substance was lodged in the left and in fourteen cases in the right bronchus, thereby upsetting the statement that foreign bodies usually find their way into the right bronchus. The following case may deserve publication for the sake of statistics:

I. R., of Woodville, O., æt. about 11 years, showed symptoms of croup on the last of December, 1888. As he had similar attacks a number of times before and was each time treated by Dr. Busch, no special apprehension was at first felt. But as some days after the symptoms, instead of abating, increased in severity, the doctor questioned the family whether the boy had not eaten something that might have entered into his air passages. They could not think of anything at the time, but the next morning they told the doctor that they remembered having seen him eat hickory nuts shortly before his symptoms of croup set in. I saw the boy on January 10, 1889. Examination of both lungs revealed nothing abnormal; at least, if there was any sound indicating the presence of a foreign substance it was muffled by the croupous breathing. Auscultation of the trachea also did not give us any more light in the case. Tracheotomy was decided upon and I was assisted by Dr. H. Busch, of Woodville, and Dr. Wm. Busch, of Genoa, O. In two similar operations which I had made a few years ago, I succeeded readily in extracting the foreign bodies from the bifurcation with a long probe, the end of which was bent to a small hook as used for the extraction of foreign bodies from the nose or ear. I might mention that, after having tried the forceps advised in our surgical works, I have worked with more advantage with this simple probe. After I had introduced it in this case about a dozen times down to the bifurcation without any result and had examined the larynx carefully, it appeared very much to us as if we were fishing in troubled waters. We were almost ready to give up all search when the thought occurred to my mind that the body might perhaps be lodged in one of the bronchial tubes. Immediately I pushed the probe down into the right bronchus, where I felt some hard substance lodged tightly, so that on withdrawal a small part of the hook broke off. I was nevertheless able to pull up a piece of hickory nut shell the size of which was over ½ inch square. Patient made a good recovery.

M. STAMM, M.D.

Fremont, O.

Disinfection by Sulphur.

To the Editor:—In your JOURNAL of February 8th I find an editorial on the "Correct Official Instructions as to Disinfection With Sulphur," in which article I find the following statement: "For a room 10 feet square use 3 pounds of sulphur, moistened with alcohol, *in an iron pan* placed in a tub containing a few inches of water, to avoid danger from fire."

I desire to call attention to a great improvement on the old iron pan, which I have discarded long since as cumbersome, dangerous, unhandy and troublesome. In the place of this pan I have a light sheet-iron stove made, much after the style of a tinner's furnace, with a double bottom,

the lower one of which is raised some three or four inches from the floor by suitable legs. On the one side of this little furnace, on a level with the upper bottom, is a small vent, say 1 inch by 3 or 4 inches, for air, with a proper damper. A sheet-iron projection, with the edges turned up on all sides, is attached to the furnace in front and a little below the air-hole, to catch any coals that might fall out during use. The top of the furnace is simply a tight-fitting sheet-iron cap with a small pipe introduced on the one side of it, with a damper. To the whole apparatus is attached an ordinary bucket bail, for transferring it from place to place.

You now have a round furnace, say 6 or 8 inches in diameter, 14 to 16 inches high, with legs to keep it off the floor or carpet, an opening on one side below for air, and a tight-fitting top with a short 2-inch pipe in the cap. All you have to do is to remove the top and throw in a good bed of charcoal, on top of which you place the sulphur; add a little alcohol, replace the cap, open your dampers and touch a match, and you are ready for business; and besides you have a cheap, simple, complete and safe practical furnace that can be carried any place, and which I will guarantee will do its work well, and which can be kept going *ad lib.* by adding charcoal and sulphur when needed.

The entire outfit should not cost over three or four dollars, and will last for years, and can be safely carried any place, while in action or not.

This outfit is placed in the hands of the sanitary policeman, who keeps it at the fire department, where a supply of charcoal and sulphur are kept, and is ready for use on a moment's notice.

Very respectfully yours,

R. HARVEY REED, Health Officer.

Mansfield, O., February 10, 1890.

NECROLOGY.

Dr. Charles S. Wood

Died at his residence in New York City of chronic nephritis, February 1, 1890. He was born at Litchfield, Conn., February 27, 1825, and had but limited advantages of education in his youth. Until he was 26 years of age he taught school in Litchfield. He received his degree from Jefferson Medical College, Philadelphia, in 1851. At the breaking out of the war he offered his services as surgeon, and was attached to the Sixty-sixth regiment, New York Volunteers, but was subsequently promoted a surgeon, U. S. V. He had served in the Army of the Potomac, and was in most of the hotly-contested battles. Subsequently his service was transferred to California, where he organized and had charge of one of the military hospitals. He resumed his medical practice in 1867 in New York City, where he resided until his death. He was a frequent delegate to the American Medical Association, and was a representative of the New York State Medical Association, of which he was one of the founders, to the Ninth International Medical Congress at Washington, D. C. At the time of his death he was just entering upon his second term as President of the New York County Medical Association. He was also an ex-President of the New York Medico-Legal Society, and of the N. W. Medical and Surgical Society, as well as a member of similar other organizations.

As a physician he was esteemed for his practical turn of mind, his industry and his candid dealings with patients.

Sir William Gull, M.D.

Dr. William Withey Gull, a court physician and eloquent lecturer at Guy's Hospital, died January 29th, in his 75th year. He it was who carried the Prince of Wales through his attack of typhoid fever in 1871. In 1872 he was rewarded with a baronetcy and an appointment as an extraordinary physician to Queen Victoria. He had a fashionable and lucrative practice during the last fifteen years. He was President of the Clinical Society, D.C.L. of Oxford University, Goulstonian lecturer. His writings were chiefly on neurological subjects.

Sergius Botkin, M.D.

Dr. Sergius Botkin, the eminent Russian surgeon and medical writer, died at Mentone, Dec. 24, 1889, at the age of 58. His career during the past thirty years has been a most brilliant one, as writer, teacher, organizer of institutions and official. He was the body-physician of two Emperors, and yet the notices of his death recite invariably that in him the best friend of the poor of St. Petersburg has been taken away. He had the best of professional training in Paris and Bernard, Virchow, Ludwig, and at home under Pirigoff, whom he succeeded in many of his official appointments about 1861. His success as a teacher, at the Military Academy of St. Petersburg, in its medical department, as professor of therapeutics and clinical medicine, is said to be illustrated in the fact that not less than twenty of his pupils have been made professors in various Russian colleges. He was, without doubt, the best known of his country's professional men, outside of Russia.

Charles MacMillan, M.D.

Dr. Charles MacMillan, formerly Consul to Rome, died in Washington, January 8, after a short illness from pneumonia. During the late war, he served with distinction on the staff of

General Grant and in other capacities, and after the war was continued in diplomatic public life until after Grant's term in the Presidency closed. During recent years he has been in private practice at the Capital, and has served as medical referee to the Bureau of Pensions.

Dr. Hermann Brehmer,

the originator of the celebrated sanitarium for phthisical patients at Goerbersdorf, died December 23d of pneumonia, contracted during the influenza prevalence in Germany. It is stated that not less than 13,000 pulmonary cases resorted to his institution for treatment by him during his thirty years' incumbency at that place.

Sad Ending of a Health Trip.

Dr. E. R. Brownell, of East Hartford, Conn., died by his own hand, by shooting, December 28th, while on a visit to Barbadoes. He had gone to that point on account of ill-health, but not finding the relief he was in search of, became the victim of despondency.

ASSOCIATION NEWS.

American Medical Association—Forty-first Annual Meeting.

EXPOSITION OF PHARMACEUTIC, SURGICAL AND SANITARY PRODUCTS AND APPLIANCES—NOTICE TO EXHIBITORS.

The forty-first annual meeting of the American Medical Association will be held in the city of Nashville, commencing Tuesday, May 20th, and continuing till Friday the 23d. In connection with the meeting of the Association there will be held the usual exposition of pharmaceutic, surgical and sanitary products and appliances. This exposition is expected to be one of the largest and most interesting exhibits of the kind ever held. Pharmacists and others intending to exhibit their manufactures, etc., should address Dr. J. Berrien Lindsley, Chairman of the Sub-Committee on Exhibits, Nashville, Tenn., at once, as a large attendance is probable; and though the space available for exhibits is considered quite ample, the local committee desires to exercise care and deliberation in assigning space and arranging the exposition so as to present everything in the most attractive and effective manner. Choice of space will be given in accordance with date of application. For the accommodation of exhibitors the Committee on Exhibits has secured for a reasonable time an option on a building as suitable as can be obtained for an exposition of this character. This building is near the city postoffice and custom-house, on the widest thoroughfare in the city, convenient of access from all points, and only five minutes' walk from the place of meeting of the Association. It is all on one floor, a one-story brick building, detached, and well lighted, with large area of floor and wall space. To defray the expenses of renting this building and the other incidentals connected with the exhibition, each exhibitor will be required to pay an entrance fee of $10. This will entitle him to 25 square feet of space. For each additional square foot 50 cents will be charged. The committee will consider themselves as the agents of exhibitors for the mutual convenience of all concerned, but they will assume no responsibility for the safety of exhibits beyond the exercise of careful and vigilant attention. If insurance of any kind on exhibits is desired, it should be procured by the owner.

Applications for space must be made previous to the third Tuesday in April. Unless such a number of applications as will be a guaranty against loss is secured by the third Tuesday in March, the committee will abandon the effort to arrange for an exhibit. The local profession and the officials of the association are making every effort to secure a large attendance of physicians from all parts of the Union, and with every promise of success. An additional inducement to exhibitors is offered in the fact that the Tennessee Druggists' Association meets in Nashville at the same time, and will be in session from the 21st to the 23rd of May. This meeting of druggists is expected to be the largest ever held in the States.

The building selected for the exhibition is the Amusement Hall, Broad street, near Spruce, on the line of electric cars, connecting with all parts of the city and suburbs. It is also directly on the line of the Overland (dummy) Railway, running to the new reservoir, past a number of the forts and battle-fields of the civil war, through a charming country to the beautiful Glendale Park. The hall will be at the service of exhibitors from May 14th to 27th, thus giving ample time for arranging and getting ready to leave. The exposition should be opened Monday, May 19th, and continue the entire week. If there should be any surplus over expenses from the exposition, it will be contributed to the Rush monument fund of the American Medical Association.

The following classes of applications will be entertained:

1. Medical books and stationery, charts and diagrams, busts, portraits, engravings, photographs, etc.
2. Hospital and ambulance plans and models.
3. Surgical instruments and supplies, general and special (gynecic, obstetric, orthopædic, laryngeal, optic, ophthalmic, dental, etc.).
4. Microscopes, analysis outfits and electro-galvanic apparatus.

5. Pharmaceutical products.
6. Rubber goods applicable to medicine and surgery.
7. Invalid furniture.
8. Invalid foods.
9. Sanitary appliances, as ventilators, filters, w. c. basins, traps, and similar necessities, and disinfectants.

Applicants for space should state the character of their proposed exhibits, that they may be assigned to their respective groups. The subcommittee reserve the right of rejection in case of apparent reason.

J. BERRIEN LINDSLEY,
Chairman Sub-Com. on Exhibits.

Nashville, Tenn., February 6, 1890.

MISCELLANY.

THE Municipal Council of Paris has ordered that the sum of 40,000 francs be placed at the disposal of the 20 Mayors for the relief of families afflicted by the epidemic of influenza.

HEALTH IN MICHIGAN.—For the month of January, 1890, compared with the preceding month, the reports indicate that influenza, pneumonia, pleuritis and membranous croup increased, and that typho-malarial fever, inflammation of brain, cholera morbus, typhoid fever (enteric), dysentery, inflammation of kidney, inflammation of bowels, whooping-cough, diphtheria and smallpox decreased in prevalence.

Compared with the preceding month the temperature was lower, the absolute humidity was less, the relative humidity and the day and night ozone were more.

Compared with the average for the month of January in the four years 1886–1889, influenza, pneumonia and measles were more prevalent, and typho-malarial fever, cholera morbus, cholera infantum, dysentery, inflammation of brain, membranous croup, typhoid fever, scarlet fever, cerebro-spinal meningitis, diphtheria and remittent fever were less prevalent in January 1890.

For the month of January, 1890, compared with the average of corresponding months in the four years 1886–1889, the temperature was much higher, the absolute humidity was more, the relative humidity was less, and the day and night ozone were more.

Including reports by regular observers and others, diphtheria was reported present in Michigan, in the month of January, 1890, at 61 places, scarlet fever at 62 places, typhoid fever at 48 places, and measles at 27 places.

Reports from all sources show diphtheria reported at 4 places more, scarlet fever at 2 places less, typhoid fever at 9 places less, and measles at 5 places more in the month of January, 1890, than in the preceding month.

The Secretary of the State Board of Health says: "La grippe" is reported by a few of their observers, and, apparently, some call certain types of cases of the prevailing epidemic "intermittent fever;" but, even though its causation and symptoms are somewhat like those of intermittent fever, "influenza" is undoubtedly the best name for the disease, and it is so reported on 98 per cent. of all the weekly reports by Michigan physicians received at the office of the State Board of Health for the week ending February 1; the most sickness being caused by influenza, pneumonia, bronchitis and rheumatism.

LETTERS RECEIVED.

Dr. C. R. Early, Ridgway, Pa.; Dr. Henry B. Baker, Lansing, Mich.; Dr. William Porter, St. Louis, Mo.; Dr. Frank H. Potter, Buffalo, N. Y.; Dr. H. C. Hemenway, Kalamazoo, Mich.; E. Merck, New York; J. Movius & Son, Boston, Mass.; Dr. Fred. Humbert, Alton, Ill.; Dr. L. Swift, Ft. Barrington, Mass.; I. Haldenstein, Thos. Leeming & Co., New York; The North American Practitioner, Chicago, Ill.; Parke, Davis & Co., Detroit, Mich.; The Upjohn Pill and Granule Co., Kalamazoo, Mich.; King's Medical Advertising Agency, New York; T. W. Hannaford, London, Eng.; Dr. J. T. McShane, Carmel, Ind.; Johnson & Johnson, New York; The Cibils Fluid Extract of Beef Co., Boston, Mass.; Gustave E. Stechert, New York; Battle & Co., St. Louis, Mo.; Dr. J. F. Force, Minneapolis, Minn.; F. C. Lewis, Catskill, N. Y.; The New Table Co., St. Louis, Mich.; S. H. Parvins' Sons, Cincinnati, O.; F. Crosby Co., New York; Dr. C. S. Pixley, Elkhart, Ind.; Dr. I. S. Stone, Lincoln, Neb.; Gladstone Lamp Co., New York; Dr. John H. Clark, Mechanicsburg, O.; Dr. C. H. Wilcox, Berwick, Ill.; Dr. Kilpatrick, South Omaha, Neb.; Sharp & Smith, Chicago, Ill.; Dr. Wm. B. Davis, Cincinnati, O.; Dr. T. H. Nott, Goliad, Texas; Dr. M. T. Brockney, Indianapolis, Ind.; Dr. Wm. H. Danforth, Worcester, Mass.; Dr. L. L. McArthur, Chicago; Oneita Spring Co., Utica, N. Y.; The Drevet Mfg. Co., New York; Dr. E. Ingals, Chicago; Dr. Madison Reece, Abingdon, Ill.; Dr. W. R. Tipton, New York; Dr. H. J. Cowan, Danville, Ky.; A. B. Powl, Keene, N. H.; E. Steiger & Co., New York; Dr. Geo. W. Stoner, Detroit, Mich.; Typothetæ, Chicago; Dr. W. D. Mann, Buffalo, N. Y.; Dr. N. G. Dill, Desota, Ind.; Dr. O. L. Williams, Oak Cliff, Tex.; Dr. W. T. Corlett, Cleveland, O.; Ward Bros., Jacksonville, Ill.; Provident Chemical Works, St. Louis, Mo.; R. W. Gardner, New York; Dr. G. Cowan, Danville, Ky.; Dr. John H. Gilman, Lowell, Mass.; Dr. W. L. Schenk, Osage City, Kan.; Dr. A. L. Carroll, New York; Dr. Leartus Connor, Detroit, Mich.; Dr. John Shrady, New York; J. Walter Thompson, New York; Dr. Wm. W. Pearce, Waukegan, Ill.; Dr. J. W. C. Smith, Benton, Miss.; Dr. J. H. Goss, Athens, Ga.; Dr. J. A. Freeman, Millington, Ill.; Dr. W. E. Burtless, Hickory, N. C.; Dr. R. S. Brice, Keota, Ia.; M. Kreedy, Fredonia, Ill.; J. Astier, Paris, France; Dr. H. H. Thorpe, Liberty Hill, Tex.; College of Physicians and Surgeons, Baltimore, Md.; Dr. Thos. S. K. Morton, Philadelphia; Dr. D. W. Prentiss, Washington; Armour & Co., Chicago; M. Gratz, Munich, Bavaria; Gustave Fischer, Jena, Germany; L. Bruck, Sydney, N. S. W.; Dr. W. Franklin Coleman, Chicago; T. W. Hannaford, London, Eng.; Dr. S. Solis-Cohen, Philadelphia; W. H. Scheiffelin & Co., New York; Dr. John N. Mackenzie, Baltimore, Md.; Horlick's Food Co., Racine, Wis.; Dr. A. R. Cain, Senecaville, O.; G. Masson, Paris, France; Galvano-Faradic Manufacturing Co., New York; Dr. M. R. Fosgate, Auburn, N. Y.; The Boston Mailing Co., Boston; B. Westermann & Co., New York; Dr. Henry Sherry, Chicago; Dr. V. P. Gibney, New York; Dr. R. J. Hart, Charter Oak, Ia.; C. M. Caswell & Co., Boston; Dr. M. W. Rozzell, Pryorsburg, Ky.; Dr. W. E. Ward, Laingsburg, Mich.; Dr. L. L. McArthur, Chicago; The Plimpton Mfg. Co., Hartford, Conn.; Dr. James P. Marsh, Troy, N. Y.; Doliber, Goodale & Co., Boston; Dr. John D. S. Davis, Birmingham, Ala.; Dr. John M. Dodson, Chicago; Wm. R. Warner & Co., New York; Col. J. H. Baxter, Washington; Dr. Joseph Martin, Jefferson Barracks, Mo.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending February 8, 1890.

Surgeon W. H. Jones, ordered to the U. S. S. "Swatara."
Medical Director A. Hudson, died February 7 at Mare Island Hospital, Cal.